

The Amateur Press Association for and by  
the members of General Technics

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The next deadline is Wednesday, February 10 !!!!!

SEND ALL MATERIAL TO GREG RUFFA

The copy count is 35 Minac is two pages every other mailing

YOUR ACCOUNT BEFORE POSTAGE IS \$ 6.29

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#### HO! HO! HO! FROM THE CHAIR

Merry Christmas everyone. I'm going to let the deadline issue stew  
 for awhile. As of now I'm changing the unofficial deadline to the  
 official deadline. There is no unofficial deadline now. (I can hear  
 all of you saying, "Big Deal." Sneer if you want to. "Okay, we  
 will!") If I have to I will force myself to collate a front cover  
 to a backcover and mail it out. I will. Honest.

Greg has volunteered to do Apa-Tech #17. Send your contributions to  
 him.

I still need covers. In great quantities. Send them to me.  
 Please.

I received my last contribution December 17, at 8pm. I meant to  
 send the apa with Alex to Windycon but he left early on the 18th.  
 Sorry, folks.

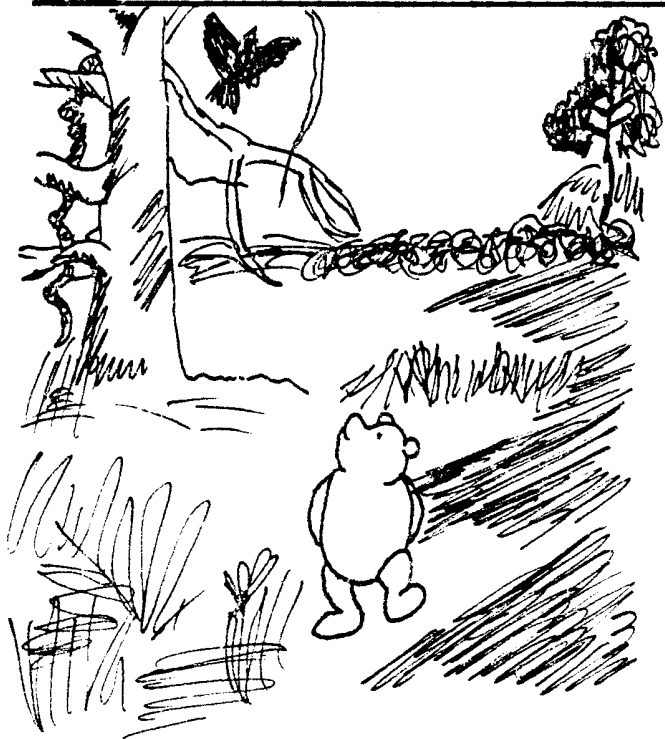
# Cing Ho! For the Life of a Bear

## CHAPTER TWO

In Which

Paul Goes Fannish and Gets Into a Tight Place

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Hallo!

Since my recent reintroduction to Fandom I have found more and more things to occupy my time.

I was turning out a Doctor Who story once a week for a while there. I would get an idea on the weekend, work on it all week, finish just in time for the next inspiration to hit me. It was like an assembly line.

One's to be printed in Mary Jean Homes' Shadowstar; one's been rejected by Paulie Gilmore's Jelly-Baby Chronicles (even though she liked it) for reasons I couldn't have known beforehand, so she's recommending another zine to which to send it, and I sent her another; and one's been submitted to Steve Jonson's (not that Steve Johnson) Gallifrey Chronicles, from whom I

haven't heard yet. I could have sent the others off to other zines of which I know, but I haven't taken the time to type them over into legible manuscripts. I'm working on a play for Moebius Theatre at the moment.

The Van Dorn Memorial Day Berserker was a smashing success. It was like a room party at a con that went on all weekend. (The party, I mean, not the con.) I am not a member of General Technics though I imagine that being in Apa-Tech makes me an Ex-Officio Honorary Member of GT Sort Of. Still, I had yet to appear here at the time, so I felt a little out of place when I got there. I'm not a "techie", but even when

the big words started rolling I generally had as much fun as anyone. I felt out of place during the afternoons when I would nap in the middle of the living room, but even then I was rarely the only one. Most people there were people I know from Thursday anyway, and I pick up on names quickly. Gretchen and Doug were most hospitable, and



Gretchen's mother is very nice for being so mundane. We saw Outlands, which I didn't realize to be a space western until afterwards. I thought it was very good -- I'm sure Margaret Houlihan is going to marry a man named Lazarus. Doug presided over the barbecue with an efficiency that, among so many enthusiastic eaters, defied explanation. Sunday night we watched Doctor Who en masse, a treat for me (I'd only seen it alone before).

I went to X-Con with the intention of finding Doctor Whozines to which to submit the stories that have been flowing from my pen so profusely lately. Not only did I accomplish that, but I also Sold Some Artwork.

I had art in the show at Minicon -- my first time -- but the only thing that came from that was Ken Fletcher gave me a spec copy of Vootie. Minicon was a very strange art show anyway, what with what Roper calls the David Egge Clearance Sale.

So Saturday at X-Con I hang nine of the ten pieces I took to Minicon and the next thing I know I'm told that three of my pieces have bids on them. Lo and behold, I go look for myself, (not that I didn't believe Martha, who brought me the news; but one tends to want to verify for one's ego's sake), and it's true! It's true! I sat through the whole Saturday auction, even though the piece I wanted came up before any of mine; they were all minimum bid \$5, and one went for \$12, one for \$10, and one for \$20.

Then Sunday Mary Jean had bid on another of mine, which pictured Han Solo playing a video game as Leia, Chewbacca, and Threepio look on, entitled, "Asteroids." She finally got it for \$20, because there were at least two (that I know of) people who also decided to bid on it. I imagine it'll be in Shadowstar 3, along with Doctor Who and the Energy Beam (which incidentally is the first Doctor Who story I ever wrote) (I'm so proud).

After commission I made \$55.80, a nice return. I enjoyed X-Con very much.

As I write for all I know Martha may have sold what was left over from X-Con (or some fraction thereof) at Archon.

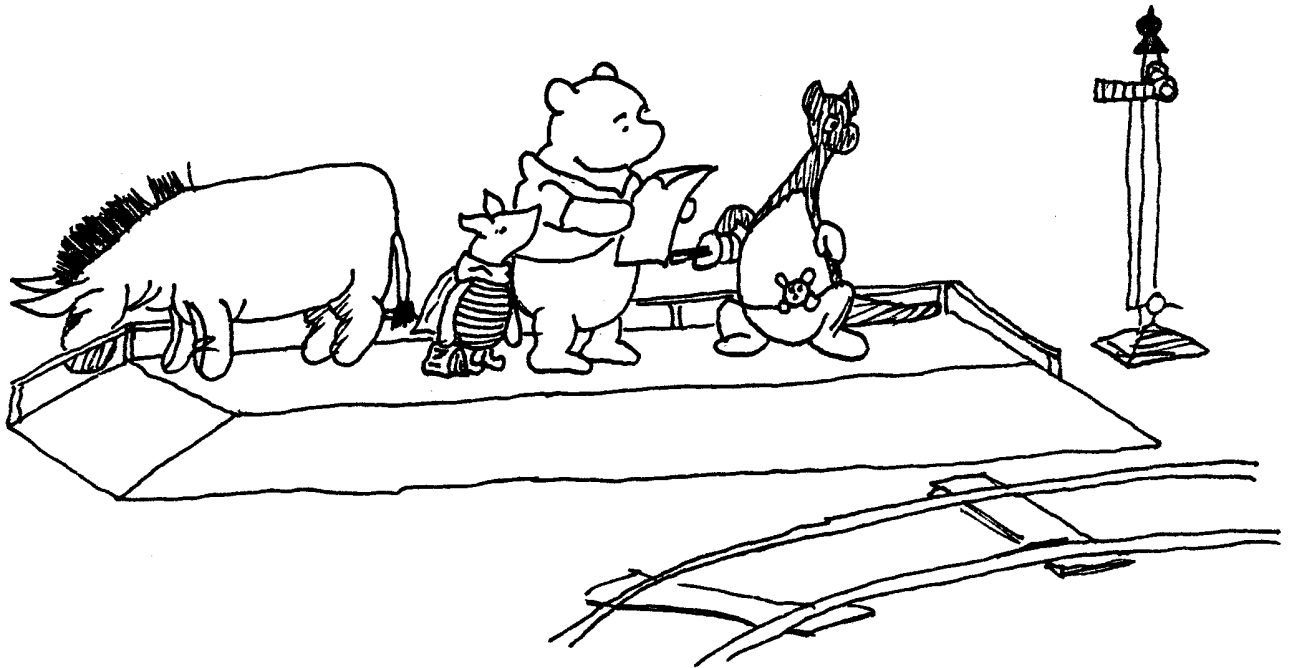
This week I plan to work up some new pieces before Roper agents me at Rivercon; two STAR WARS panels, a Raiders gag, and two comic strips from my dailies.

At the beginning of June I reinstated my practice, started in high school, of drawing a comic strip every weekday for/of/about myself and the people I know. I've been drawing one a day for the past five years pretty constantly, but last November I took a hiatus because I hadn't any regular following -- I wasn't seeing my friends at Northwestern as often as I had the year before and the only other person I was running into regularly was my roommate (except for the people I worked with, but they weren't interesting enough people to me to draw cartoons about). And I'm used to a regular following -- I find very little satisfaction in grinding out a gag every day for no one but me to look at.

Then one day I got the bright idea to turn my Fans into my fans. It's worked out rather well. People seem to enjoy seeing themselves in cartoons, even if, I've discovered, they don't think my caricatures look like them (actually, several people here say I draw them better

than anyone else who's ever tried).

Moreover, the dailies have acted as a catalyst to make everyone (especially me) totally at home with my presence among Us, in one clean painless stroke. The other Thursday Gretchen (never one to mince words) came right out and told me she's glad I found Us; and as I was leaving Roper out of the blue asked me in on the game of Rail Baron the next night. This is known as Positive Reinforcement (even though I'm able to infer that Roper will ask anyone to play Rail Baron).



Digression and clinical note: when one is doing nothing more than typing and drawing, and yet it's hot enough that one sweats as if one was out mowing the lawn, it has an adverse effect on one's temper.

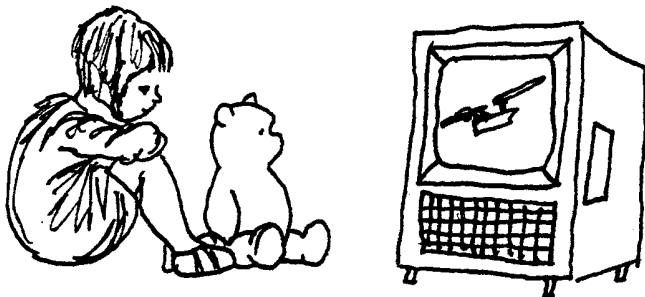
I also have to draw soon my next submission for Vootie, and two birthday presents. This year I've come to the conclusion that God gave me two best friends with adjacent birthdays for a reason, so I'm only going to write one story, with both of them in it, and draw two copies of that.

When I got the first mailing of Vootie with a zine of mine in it, it precipitated a short minor inferiority complex. My style is very simple (the illustrations in this zine are an exception; they can take as long to draw as an entire daily) -- I rarely draw backgrounds, and my characters are simple line drawings. Compared to the other Vooters my work looks downright unfinished.

But that's my style. As a writer, as an artist, as a reader, I am much more interested in characters and their interactions. I'm not saying I can't learn anything from the other Vooters, and I do think I could do with a little more maturation of my style, but the basic principle is just what I want it to be.

Saturday at X-Con, at the masquerade, I told Gretchen that before we went to bed (she, Roper, Dave Marquart? Mahrquahrdrdt? and I shared a room) I had a question to ask her Tarot deck. So later

on, she brought it out, and my question was, "What will the new regeneration of the Doctor be like?" Gretchen said to me, "Paul, you're an intelligent sensitive person with a good sense of humor -- why are you a mediafan?"



When my mother and I were "trekfen" in Omaha in the middle seventies, I was vaguely aware that "trekfen" didn't/don't get along very well with "trufen." This always sort of befuddled me, as I am befuddled by any group of humans who don't get

along with any other (group of) humans. (I've always gotten along fine with everyone. I don't dislike anyone I know, and no one I know (to my knowledge) dislikes me.)

I imagine that most of the disparity between "mediafen" and "trufen" comes from the fact that most "mediafen" are "neofen". When I was a "trekfan" it was mostly because STAR TREK was the only sf I'd ever sat up and taken notice of, and "trekfandom" was right there, ready to take in and nourish the most adolescent (wanna see the stories I wrote then?) fellow traveler.



The reason that "mediafen" are looked on as adolescent is because so many of us are adolescents! Think about it. Didn't you act adolescent when you were an adolescent?

And "mediafandom" does offer opportunities that "trufandom" doesn't necessarily; for instance, the chance to work with an established set of characters. I already mentioned my fascination for characterization; I like to figure out how this or that character will react in a given situation. (Especially the Doctor. He can go anywhere, he can go any time, he can do anything -- given another regeneration or two he can be anything. There's nothing you can't do with him.) And if nothing else, it's good practice for when you start to develop your own characters.

When this is all there is to be, it could make you wonder why -- but why wonder, why wonder? I am me, and it'll do fine, and it's beautiful, and I think it's what I want to be.

Midwestcon was my first relaxcon. I started considering going about the same time Amy started considering staying home, so I wound up with her ride with Martha and Jim Fuerstenberg (sp?).

Being a relaxcon, there's not much to con report about. Martha and Jim and I saw The Shining and Used Cars on the hotel movie station. Dick and Valli and Robin Beal and I spent a lot of time at the pool and at dinner together. Dick, I swear, someday I'll get into trouble at a con and you won't be there, and I'll be up a hunny tree without a gorse bush. In the hucksters room I bought an unMother's Day gift from Steve Scherer and The Time Tunnel by del Rey and My Life with Women by Richard Armour (it's been too long since I read Armour.)

The ride back was as entertaining as the con if not more so, though we had to stop for an hour or so some miles out of Indianapolis because of oil filter trouble or something. Jim worked under the hood while Martha read and I didn't do much of anything. Then when we got back on the road we started playing travel games, like you do on family vacations when you're a little kid, and that lasted even after Jim dropped us off downtown to catch the el home.

I got home late, tired, and sunburned. I had a great time.

# MAILING COMMENTS

MIKE Where can I get a pencil typewriter?

JAMIE Congratulations on better-halving yourself, and many happy returns of the day.///I haven't come across anything libelous in any of the apas I belong to. Occasionally there's something a bit indiscreet...  
///Re yr ct Jerry: AUGH.

MISHA I don't think I belong to a conglomerate. What exactly is a conglomerate?

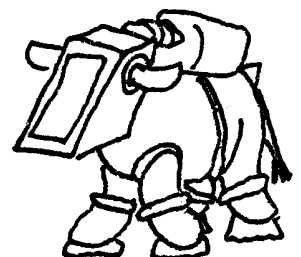
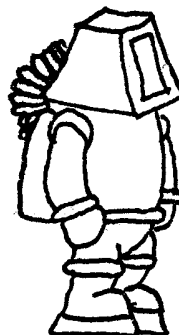
HIGGINS Re yr ct Roper: Why should it take twelve fingers to play a twelve string guitar? It doesn't take six fingers to play a six string guitar.///Re yr ct Greg: Are there practical hovercraft? I didn't know that.///Re yr ct Gretchen re "American Pie": It's probably spelled "Lenin" in the lyrics, but he means Lennon, because the "quartet" is the Beatles (the "king" is Elvis, and the "jester" is Dylan), according to what Casey Kasem said at the time.



LEININGER The way you put words together is very entertaining.///I am a great Underdog fan myself, though I work again now and can't see it. I really believe that children's humour is wasted on children. The Muppets on Sesame Street are a prime example.///I've come in on this Great Fanzine Hugo Debate in the middle, but thanks to you, and Higgins earlier, I now have all of the background information necessary for an informed opinion. Unfortunately, I can't think think of a thing to do about it.///"...half the exercise he gets regularly." I wondered what was the

other half you meant, but upon sufficient reflection it becomes obvious.

ROPER Re yr ct Dave: If there's a nuclear war and we both survive, meet me at the corner of Chicago and Main and we'll plot strategy. I'm serious. "Built for wilderness survival" or not, you're not exactly insapient. (Bring your own Eve.)///





re yr ct Rod: I'm not buying up old Doom Patrols. I find the flashbacks quite staidfactory.///Re yr ct Gretchen: Luckily, I now work at a place where there's little dress code and no public contact. It's really nice not to have to look nice.///Re yr other ct Gretchen: The only way I lose weight is to eat less (I won't/can't stay on regimented Diets), and the only way I eat less is to run out of money. Fortunately, I don't foresee losing weight within the predictable future.///Re yr other ct Gretchen: Speaking from inexperience, the act of physical love has an inherent exposure to vulnerability in it that I for one couldn't expose to just anyone. As for the mental and emotional aspects ... well, actually I'd rather not get into that right now.///

DAVE Having met you at the berserker and at X-Con I find you just as intelligent and articulate as you seem in your zines.///"Oh, well, I still have good old Apa-Tech to keep me in touch"? Well, you couldn't have known.///The Doctor eats jelly baby bears (shaped like bears), called jelly babies for short. And properly he is never abbreviated, nor referred to as "Doctor Who", except by the title of the series.///What's Social Darwinism?///Clif Summoning II? Would that be a second-level spell?///"...imposed on you from outside." Extra-self imposition isn't always necessary, as I believe I've demonstrated with my dailies; but (in my case anyway) it needs to be replaced with appreciation, or at least an audience.///I believe that James Kirk is from Iowa, not Ohio; but my source for that statement is The Making of STAR TREK, and Whitfield is hardly the best authority on the subject.

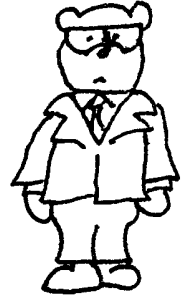
ROD Re yr ct Dave: The future universe in Mote is Pournelle's only, according to a Galaxy article I have from (needless to say?) some years ago.///Re yr ct Gretchen: There are a wondrous amount of great lines in Harvey.///I read that Roddenberry didn't like the way ST-TMP turned out, either. Apparently Paramount won't let him do what he wants with their property. It befuddles me that they drag their feet so much with a property with such proven salability.///Re yr ct Superman II: "Just what are they going to do for an encore?" End the story, of course. Or that's what I'd do. If you want to know how I'd end it, though, give me at least a month's notice before you have to know.

GREG Where did you find all that wonderfully inappropriate technology, Rube Goldberg's memoirs?///Re yr ct Dave: I was wondering if anyone else had noticed that about politics. I saw a relevant statement in a Hallmark sort of place the other day: "Don't wrestle a pig in a mudhole. You both get all dirty, and the pig enjoys it."///Re yr ct Doug: Who says we need a "sign" to stir our faith? It's just good to hear from Him once in a while, that's all.

JERRY I like the language just the way it is, too. It's fun to play with.

VALLI Sorry, I'm not very technically-minded.

I recently re-read Elliot S. Magin's novel Last Son of Krypton. It's terribly well written, with an intricate sf plot and a great deal of background character exposition that one wouldn't be able to work into the original source material. I was moved to tears twice -- at Jonathan Kent's death, and at the origin of Luthor's hate for Superman (a version of the story I've never come across anywhere else).



The more I look at the character of Kal-El from an actor's viewpoint the more I admire and envy Christopher Reeve. I think this is also because I identify with Clark Kent. I even look like him.

Anyhow, the upshot of this zine is that all my free time is taken up by various fannish projects and various fannish social events and various fannish conventions and various fannish people.

But please don't think I'm complaining.

1005

Silly old cartoonist



One hot for the zine of a

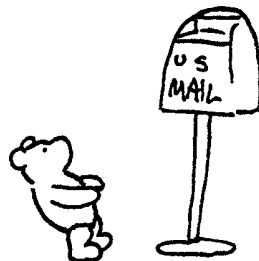
Bear  
CHAPTER FOUR

IN WHICH

Apa-Tech #14 Loses a Zine, and Apa-Tech #16 Finds One

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It's not my fault...

Chapter Two was supposed to be in A/T #14. At Denver when I received my mailing I discovered it had been delayed in the mail. I told Renee to put it, when it came, into #15. When #15 came I discovered that Chapter Two was not delayed in the mail, it was pure D lost.

Chapter Four was supposed to contain all the mailing comments I missed last time plus all the mailing comments I'm supposed to have this time. Due to lack of time, and money (from re-reproing Chapter Two), it contains neither. Chapter Five will not be a special Triple Mailing Comments issue, I'm sorry. I hadn't anything interesting to say, anyway.

It's not my fault...

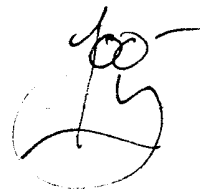
And now back to the news.

Moebius Theatre is producing a play I wrote, for Capricorn; and cast me in the closest thing the play has to a lead part. I didn't do it on purpose. Really.

At work they were initiating a night air freight delivery service, and they were sending a letter to prospective customers, and they wanted a cartoon on it, and they paid me \$25 for it.

I am currently, soon, or probably to be appearing in print in: Shadowstar, Mary Jean Holmes' zine; Dick Smith's new zine; Michael Parker Smith's zine, whose title I forget; a Whozine edited by Naomi Konoff; a Whozine by Paulie Gilmore; Vootie; Rune; Windyapa; and, of course, Apa-Tech. ...jeeppers whatalist

Many happy returns of the day.



# TRANSPORTER TOPICS

Rodford E. Smith  
922 Belvoir Dr.  
Frankfort, Ky. 40601  
(502) 223-2119

White Rabbit Syndrome. I promised myself that this issue would be in early, and it is now Sunday, November 29th. Censored. Its not that I don't want to be early; its just that everytime I have tried to sit down and write something has happened. Now I have no choice. Fortunately, there are still several hours left, so this may be a big zine.

## MAILING COMMENTS

Back in the Saddle Again: Hello, Renée. I got issue 14 at Denver. Someone, female I believe, asked if I had one and fetched it when recieving a negative answer. The next time a lot of people are late just go ahead and send out what you have, saving anything arriving after the deadline for next issue.

Mike Bently: I like those General Products 4.5 and 2.5 hull comments who thought those up? And what would a 1980 mustang be? Anything with a tail has to expect getting it door slammed/stepped on/rocked over/etc.

The Third Bear: (Don't blink or you'll miss it). Nice, Paul, but far too short.

Unsound Effects: As you probably know, Bill, I am somewhat interested in the terraforming of Mars, and would appreciate hearing anything else you learn about Chris McKay's work. I, too, missed the talk at Denvention.

The F104 was used in the X15 program for a number of purposes, including training the pilots to land, since an F104 on approach with gear down and no flaps has about the same glide characteristics as the rocket plane. Also, altitude is important, at least on a planet with air and mountains. On an airless world with a perfectly smooth surface you could mount an inn drive on a magnetic sled and thrust parallel to the surface untill you reached orbital velocity. On earth launching over the ocean gives a reasonable approximation of a perfect sphere, but unless you get above most of the atmosphere as quickly as possible you waste a lot of fuel. I have a clipping from AWST somewhere in this zine on something similar to my idea. As for Juggernaut, see below.

The laser mine is not my idea; I just reported what I had read elsewhere.

Jamie: Another blinkzine. More! More! (Writing that is, not short contributions.)

As we Plan Our Escape: Will you people please stop bragging about how much weight you have lost!!! All the dieters put together have lost about as much as I weigh!



Greg Ruffa: Since rockets are launched straight up (or nearly so) for the first few thousand feet to get them out of as much atmosphere as possible before building orbital velocity most of the first stage goes into gaining altitude. If you can begin above most of the atmosphere you can discard the first stage. Remember Project Skyhook? With an air-breathing engine you don't need to carry oxidiser, which you don't need to carry the fuel to carry the oxidiser, and so forth. The potential savings are enormous. That's why the X15 was carried aloft by a B52. A similar rocket plane launched from 100k ft. could probably achieve orbit; certainly it could with extra fuel tanks. That would be single stage to orbit, and with a passenger, to boot.

I still think that the way to begin terraforming Mars would be bombardment by iceteroids or comets. That way you get heat and water at the same time.

As for the bucket worlds, you use more than one set of cables. Some would be hooked to the lip, others would be along the sides, maybe in several places, some under the bottom, and a few even over the top, since at that distance from the bottom they would be invisible. We use that old engineering standby, redundancy.

Back on the Ringworld: (Dave Levine) Beg to differ with you, Dave, but the network I work on was established in 1968, and was by no means the first. Why does BULLVNS cost so much to run? Because it finds the shortest route for over 800 trip origins on a network with over 5000 links, many of them multiply interconnected. And if you know anything about shortest-route jobs this is an enormous amount of work, even for a computer.

About that laser wound; are you sure that the facts are as stated? I have seen films of surgeons using laser scalpels with impunity, cutting away with no word about such effects. Admittedly this is a different situation.

If TCR doesn't publish my article I'll run it here. So far it has been two months (as I write this) with no word from them.

Insert: I am sitting here watching a Nova episode on designing parks and plazas for cities, and it is fascinating. There is a lot of human engineering being discussed. As a civil engineer I recognise many of the principles discussed in my classes. Even Louisville was mentioned, and part of the plaza outside the Galt House, Rivercon's current home, was shown.

Dick Smith: You think a state government job in Kentucky is not Political? Brother, every time we get a new governor the ulcer rate rises like crazy.

Fortunately, karate training has helped somewhat in the physical department. No real problems with my arm for some months now. As for the tank, that is being abandoned for now. It was originally intended to be a showcase for the sort of military technology we can expect to see in the next few years, presented in an entertaining manner.

## USAF Studies Small Manned Space Vehicle

San Diego, Calif.—General Dynamics has received an Air Force contract to study technology requirements for a small, manned space vehicle which would be capable of placing payloads in orbit on short notice.

The one-year study contract, awarded by the Air Force's Flight Dynamics Laboratory, calls for evaluation of technology needed in the event a decision was made to develop a vehicle that could carry key payloads into orbit and then return for subsequent missions. Rockwell International has received a similar study contract from the Air Force.

General Dynamics Convair Div. officials are evaluating several concepts of vehicles in the study, known as the advanced military spaceflight capability (AMSC). Those concepts include:

- Carrier aircraft launch.
- Horizontal launch using a conventional runway, sled or accelerator.
- Vertical ground launch.

The vertical launch concept could be developed with current technology and hardware, although it might not be capable of meeting all operational requirements, such as rapid launch capability, according to program officials. Such a vehicle might be approximately 30-ft. long and have three General Dynamics Centaur-size stages attached side-by-side—with the space vehicle mounted on top of the center stage.

The vehicle, however, also could be equipped with folding wings so that it could be placed in the cargo bay of the space shuttle for flight training exercises or routine orbital operations. The center stage also could remain attached to the vehicle in the shuttle bay for possible missions to higher orbital altitudes.

The vehicle could be designed to have a removable cockpit module that could be taken out prior to an unmanned flight for additional payload carrying capability.

A runway-launch rocket vehicle would fulfill many requirements, but its development would be the most technically challenging of the three concepts. One primary problem would be vehicle weight.

An aircraft-launched space vehicle could be developed in the near-term, but might have payload limitations based on the carrier aircraft's capabilities.

Approximately 80% of the vehicle's weight would be its drop tanks and propellant, leaving about 50,000 lb. or less for the vehicle itself and its payload.

In the event of a military alert, the carrier aircraft could take off and loiter, possibly transferring propellant from tanks inside the aircraft to the space vehicle. □



The idea is that as armor and active defenses get better few man-portable weapons will be able to do more than annoy a main battle tank. They will be more like the terrestrial battleships they were originally envisioned as. The XM-1 is a prime example. It was also partially inspired by some of those giant robot cartoons. Unfortunately, my initial enthusiasm has faded. The 200tonne class tank is being put away for a time, although I may reveal some of my ideas here in the future.

Bill-Ell: The shape can be anything you are willing to cut cardboard into. There is some slight problem with curling, but that is minimal and can be avoided by experimenting with different types. Surface smoothness is a problem. My current gun has a rather rough finish, due to the glass cloth used, but a finer cloth painted properly should be fairley smooth, and if you use it on only one side you can put just a thin coat of epoxy on the other, giving a surface similar to enamel. I read a lot of model aviation magazines, and they have much information on high tech materials. An SR-71 in orbit?

#### END OF MAILING COMMENTS

Ever hear of hypoglycemia? Actually, this is a general name for a number of related disorders, all of them related to problems with metabolising sugar. In my case the disease manifests itself in a form disturbingly similar to drug addiction or alcoholism, though far milder. What happens is that I will consume a large amount of sugar-containing food for a few days, such as during Thanksgiving or Christmas. Soon, I begin craving sugar. There are a number of physical and mental side effects; nervousness, irritability, difficulty in concentrating, and tiredness. Many people have this problem, to many different degrees, some so mild that there is no practical reason to do anything about it. Unfortunately, the problem usually gets worse with age, and the only cure is to cut out any and all foods containing large amounts of sugar (candies, cookies, cakes, colas) and tough out the withdrawl symptoms. As I said, my version is mild, but I have recently found myself sleeping 8 or 10 hours and waking tired. Therefore, I am back on the wagon. Its sunflower seeds and wheat germ instead of Twinkies and chewing gum. So, if you see me drinking water for lunch you'll know why. And if you find yourself craving a candy bar even though you have just eaten you may know why.

#### Apartment Hunting

I have got to get a place of my own. Living at home has it's advantages, but twenty-six years are enough! Part of the problem is that my schooling and work have all been so close to home that there was no real reason to move out, and a very good financial reason to stay. Now, though, it is high time for this over grown fledgeling to leave the nest. My mother has already made plans to turn my room into a sewing den, and is making strong hints that I should be getting out on my own. Don't be surprised if there is a change of address notice in either next issue or the one after.

*14 min; three pages seems to be about  
my mode. More next time.*

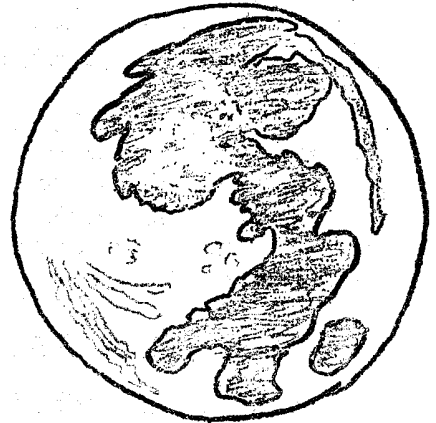
*Rod*

# TAILFINS ON 'EM AGAIN

\*\*\*\*\*

Bill Higgins presents another episode in his stunning saga of life, love, and magnetism for Apa-Tech 16 and distribution elsewhere. The author lurks ("The Author Lurks... a new SHADOW Mystery from the pen of Maxwell Grant!") at 853 Lorlyn Drive, Apartment 1A, West Chicago, Illinois 60185. Phone: (312) 293-1050. Office address is MS 344, Fermilab, Box 500, Batavia, Illinois 60510. This is Spinthairiscope Media publication number Fourteen.

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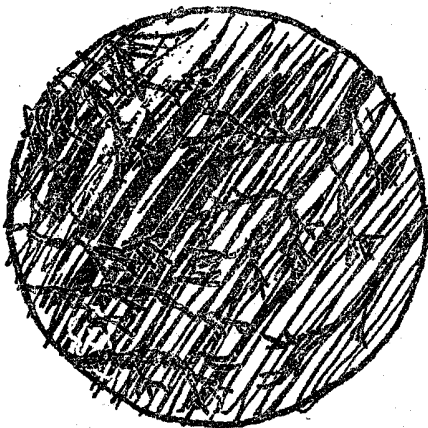


I'm gonna write songs  
until I write the song  
that makes the guys in Detroit  
who draw the cars  
put tailfins on 'em again.  
-- John Prine,  
interviewed in the Chicago Sun-Times

## And When I See Moonglow, Way Up in the Blue...

On my days, er, nights off I usually try not to change my sleeping schedule so that it will be easy to go back to work at midnight Saturday. So I have to amuse myself somehow during the hours before bedtime around sunrise. I putter in my apartment, or read, or go to the lab and write.

The other night I was sorting some old junk in my closet when I came across the lost ten-power Bausch & Lomb telescope I got in my Cub Scout days. I'll have to go out and look at the sky one of these nights, I told myself. Then around five the DJ I was listening to began raving about how great the full Moon was looking as it set. This was clearly an omen. I dashed outside with the scope and peered at Luna. It was bright yellow, a little orange perhaps, and many features popped out at me. I tried to minimize its zigzags about the field by bracing my elbows against a parked car.



Inspired, I pulled an old envelope from my pocket and began sketching. I'd never paid much attention to these details before. This was a good way to teach myself

a little selenography and to feel a kinship with Galileo, Riccioli, and other pioneers. Looking it up later, I found I had distinguished the Oceanus Procellarum and the Mares Tranquillitatis, Serenitatis, Crisium, Nectaris, Fecunditatis, and Frigoris. Several craters could be seen as tiny white spots, but I haven't identified them all yet. Tycho wasn't apparent, but I could clearly see its rays stretching for hundreds of kilometers.

As the orb set, it got low enough that some distant bushes interposed themselves. Slowly-- the motion of the Moon across the branches was just perceptible-- it acquired a fantastic network of deep black veins covering its yellow face. Its newfound canals were much more distinct and intricate than those of Lowell and Schiaparelli on Mars...

### I Don't Know Whether to Laugh or Cry

Found at a record store in Oakbrook Mall:

Father Frank Perkovich Presents

More Songs & Hymns from the Polka Mass

(Father Frank is blessing us, superimposed on a picture of an accordion...)

with Joe Cvek and the Polka Mass-ters Orchestra

### More Tales from the Rectangular Principality

Last issue I promised a more complete review of my three-week sojourn in Colorado during September. I was busy just about the whole time I was there, running around seeing old friends, meeting new ones, and enjoying various attractions. After Denvention, I stayed a week or so with Paul Acker in Denver, hopped to Boulder for a week with Barb Budde, and came back to Paul's for the balance of the vacation.

Paul has come to Denver after a meandering journey across the country: South Bend, Grand Rapids, Des Moines, Fort Collins, a year here, a couple of years there. Now he works for a small architecture firm designing condominiums and apartments in the Denver suburbs. We graduated from Notre Dame in the same year, and have perhaps spent as much time together since graduation as we did before. Again this trip we managed to get in some serious and whimsical talks between glasses of wine.

Staying at Paul's place off East Colfax was neat because it put me surprisingly near a lot of other people.

Pat and Linda Roney have a beautiful house a few blocks away. Their time is divided between refurbishing it and planning for the family practice Dr. Pat will start when he finishes his residency next year. (Does he know how many of my folksongs he's responsible for? Graham Nash, and the Godspell stuff, and Lightfoot and hot jello...) He's writing user-friendly (yay!) Pascal-based software to help run his practice, and has an address file for their buddies. I am Friend 53.



Not far away, Peter and Margaret Waymel are attending preschool, their mother Annette is painting the woodwork and having another kid (Yipe! which must be here by now... wonder when the birthday was?), and daddy Steve is selling robots. Yeah, industrial robots. Lots of factories out there in the Rockies will be needing mechanical friends, and Steve's new company, FARED, is ready to deal any of five brands. Steve was invited to help start the company by a business school buddy, Chris Peake, the rising young executive with fannish leanings.

I had to phone Erie, Pennsylvania to dig up Eileen Mackrell, but seeing her again was well worth the effort. A new ensign, she was stationed at Lowry AFB; as soon as I phoned, she jumped on her motorcycle and zipped over. I'd missed her quite a bit while she was studying at Cambridge, and the few meetings we've had since then have hardly been enough to keep up. Well, no matter how much you know about philosophy and theology, it can be hard to find a job you enjoy. After doing some hard thinking, Eileen chose to join Naval Intelligence, and she and the Navy seem to be satisfied with each other so far. She's still training, but will soon be sent to join an operational unit, probably a photoreconnaissance or antisubmarine patrol unit. We went out to dinner with Paul and I learned something of her training. I'd never imagined that Eileen might one day speak with authority about Mach 3 aircraft...

#### Barb, Boulder, and Bookstores

Remember the Liturgy Freaks? "And to begin today's halftime show, here's the Notre Dame Vespers Team doing their famous high step to mid-field! Forty precision thurifers swinging forty thuribles (kachink,kachink)... Now, as the stadium fills with smoke, the Chapel Choir marches onto the field, a hundred and fifty strong. As they form an icon of St. Peter, the white of their albs standing out clearly against the Astroturf, the choir members raise their voices to sing that old favorite, 'My Prayers Rise Like Incense...'"

At least one of the old crowd is living out her dreams. Barb Budde has been Director of Liturgy at St. Thomas Aquinas parish in Boulder for about a year now. She is astonishingly busy, but I'd bet there's nothing she'd rather be working at. And she did manage to make time for me on my visit. We spent a day in Rocky Mountain National Park with Paul Acker (and a couple of others, but they were fast walkers, vanishing in the morning and reappearing, several hours late, just at dusk) which was most pleasant.

When Barb was professionally busy with U. of Colorado students, nuns, laymen, and priests of varying degrees of sanity, I found it easy to keep myself busy. Boulder is like Cambridge, or Ann Arbor: "three bookstores on every block, and a bar next to every bookstore." But it has mountains, too. It is much closer than Denver to the Front Range, and the mountains are with you everywhere you go in town.

There's lots of scientific action in the town, with the National Bureau of Standards, the National Center for Atmospheric Research, and the university's Joint Institute for Laboratory Astrophysics and Laboratory for Atmospheric and Space Physics.

Naturally I went nuts in the bookstores. I managed to mail myself 22 pounds of books before I left the state. And they're building more stores! Some folks find Boulder a bit depressing because of its hipness. You have to be nonconformist in just the right way. Look under the plastic surface, however, and it's easy to find good people with real warmth. I liked it. Besides, Haagen-Dasz is pretty good ice cream...

### Gasp to Yer Partner, Swing Her 'Round

Last day of the Worldcon: A bunch of us had tired of Japanese cartoons and wandered off to Larimer Square to catch dinner. Andy Anda and Sam Paris recommended a restaurant down there. When Jerry, Martha, and I arrived with AA&SP, we found a bluegrass hoedown in progress right in the street, between the bratwurst stands. Watching the square dancing Martha allowed as how she should probably be out there. You may be sure I was not slow to agree... suddenly we were romping in a long double line of partners, circling right, circling left, and dosey-doeing. It was great to be dancing-- but it helped me discover just how thin Denver's air is. It sure added a lot to the day. Thanks, Martha!

### Wasn't One Bill Higgins More Than Enough?

One of the pleasures of my trip to Denver was meeting some of my once-removed cousins for the first time. Kathleen Higgins Kelley and her brother, Bill Higgins, are both a few years older than I am; both married and-- after many peregrinations-- both settled in Colorado, a few miles from each other. I had not seen either of them since around 1970. Plenty of folks, including my parents, who have seen them more recently recommended a visit. So I let them know I was coming to Denver.

Bill picked me up after work and drove me home to the northern suburb of Brighton. Danny, Bridget, and Aileen were a bit bewildered when he introduced me as "Bill Higgins," but Danny soon figured out that he should call me Uncle Bill.

(See, Bill-- my cousin-- is named for my grandfather, William James Higgins. I got the same first and last name, but the Skeffington comes from my maternal grandmother's maiden name. Among the Higgins cousins I've usually been known as Bill, while Bill is invariably referred to as William.)

I spent a relaxing weekend sharing in the family life. Grade-school kids are people I don't have a chance to mingle with very often. Danny's nine, and his sisters and cousins are younger. We drove nearly to the summit of Mount Evans on Saturday, finding it chilly and hailing at 14,000 feet. So we didn't spend too much time there, but it gave me a good glimpse of the world above the tree line. We could see evidence in the boulders strewn about that the glacier above was slowly grinding the mountain to gravel. Multicolored moss covered the ground, at least where there was water available.

A short tour of communities in the area delivered us finally to Red Rocks, the natural amphitheater that's been developed with bleachers and lights into a spectacular setting for concerts. Giant, er, well, red rocks tower over the stage and audience. Half a dozen visitors had brought acoustic guitars down to the stage and were performing Marshall Tucker tunes together, seated on convenient ledges. I sketched while the kids roamed up and down the bleachers.

During the weekend I managed to get caught up on ten missing years with Bill and Ellen. Their journey from starving hippies to suburban parents generated plenty of stories, and surely there are more to tell.

The following weekend I went hiking in Rocky Mountain National Park with my cousin Kathleen Kelley and her children, Maria and Sean (five and seven respectively). Climbing from 9000 feet to 11000 in just three miles would seem a daunting task-- but if a five-year-old wasn't complaining, how could I? Actually, this hiking business is much less strenuous than I would have guessed, and lots of fun. Provided you're not in a hurry to get anywhere.

We just climbed up as far as we could in a reasonable time, stopped for lunch way above the trees, then strolled back down. There were many stops for rest and air along the way, of course. RMNP has much more scenery than Illinois, but that's because it's scrunched in so efficiently. Wonder what the ratio of its surface area to its map projection area is? Rain threatened us a couple of times, but didn't really appear in force.

Sean and Maria liked cartooning in my sketchbook and my kazoo. They shared it, half a mile at a time, on the downward path. If they hadn't politely returned it at the bottom, Kathleen probably would have hated me for life. (Try giving a kid a new kazoo someday...)

Both the Higgins and the Kelley cousins liked ukelele music, which I performed during our car rides. "Tie Me Kangaroo Down" and "M.T.A." were favorites, though Bill and Ellen were partial to "Dead Skunk" after all their country driving in their teaching days. All five of the kids are very bright, and I could see images of myself growing up in them-- especially in the boys. Danny and Sean seem to be

experiencing some of the same pleasures and pains I went through at seven or eight or nine. Schools-- as so many of the readers of this apa know-- make some provision for slow students, but are at a loss when really smart ones show up. It's hard to support your children through an education that really isn't very interesting to them. But these particular parents went through similar childhoods, and as far as I can see, they're doing a damn fine job of raising the next generation.

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DYXLESIA-- n. The self-diagnosis of a dyslectic. See DYSLEXIA.  
(from Stan Kelly-Bootle's The Devil's DP Dictionary. )

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### Not with a Bang, but with an Olufssen

I phoned Gordon Garb at his Cray Laboratories office while in Boulder. Walt Liebscher, the L.A. eofan, was staying with him, and we agreed to meet for dinner. We shopped in the Boulder Mile High Comics, where Walt made recommendations on various paperbacks. Having been around since before Denvention I in 1941, he must have read everything by now, right? Dinner and video games on the Mall were good. Then we headed for Howard's Place.

Howard Davidson is a fellow techie/physicist/crazy person I met at the Worldcon. He presides over a house full of wonderful stuff. When he needs a terminal, a piano, a milling machine, or an oscilloscope, it's only a few steps away. His machine shop is roughly equivalent to Tullio's (to the untrained eye, at least) and I daresay his electronic setup is a bit better. Howard and Sarah (dammit, why don't I write down people's names? not even sure I got hers right...sorry) run a company called FTL, Inc., which does basement-type electronics projects, such as testing a bunch of custom-made electronic wrist thermometers. Naturally all kinds of scrounge, books, cats, and Toll House Morsels are also available in the house. The night I was there Howard and Gordon dissected GG's Bang & Olufssen turntable. Boy, do those things ever come apart neatly. Diagnosis came after a little voltmeter work, and the machine snapped together again. We bid Howard and Sarah goodbye, and departed on our quick midnight tour of Cray.

### Array for the Red, White, and Blue

Cray Laboratories in Boulder, for which Gordon, Howard, and Jon Singer work, belongs to Cray Research. After a career designing sophisticated and admirable computers for Control Data, Seymour Cray decided to start his own company and work on really interesting stuff.



Cray Research makes the Queen Mary, the Empire State Building, the blue whale of computers-- the Cray 1, the fastest computer in the world. It's an array-processing marvel, it looks like a comfortable piece of furniture, and if you put your ear up to it, you can hear the faint sound of numbers crunching. It is a tribute to the farsightedness and difficulty of its design that after five years or so, it is still the fastest machine in the world.

Cray Laboratories is trying to build a faster one.

Isolated from the parent company's facilities in Wisconsin, the Boulder group employs about forty people sweating over state-of-the-art semiconductor technology, logic design, and computer architecture. Seymour is determined to keep them on their toes; he's started yet another design group at home to build a fast machine.

And they keep one eye on the horizon beyond. Howard had just returned from a conference on JJJ-- the cryogenic, superfast Josephson Junction Logic that's still a creature of the laboratory. It's much too unproven to go into the Cray 2-- but maybe the Three, or the Four...

Gordon demonstrated to Walt and me the computer-aided design system he shepherds. Driven by a Nova, it has a monochrome CRT for typing and viewing commands, and also a mouth-watering high-resolution color CRT for displaying graphics. He showed us his Denvention membership map of the USA, running it through zillions of the possible colors. (Look at the black-and-white copy in your program book, and you will see peculiar shading patterns, such as lots of tiny little propeller beanies.) The machine talks to a VAX, and is apparently de rigeur for people designing complex chip layouts. After playing with it for a while, we toured the offices, and I left cartoons on a few selected blackboards.

The boys can't say much specific about the new computer, which is still in its early stages, but it will make heavy use of programmable-array logic. Custom chips will be made by a semiconductor house, then shipped to Boulder where the last couple of layers of metal will be added in Cray's clean room. "The VAX tech gets annoyed," says Gordon, "because the air in our clean room is cleaner than the air inside the disk drives, even with the filters."

And no, despite rumors Howard kept getting asked about at the JJI meeting, the Cray 2 probably won't be spherical. "You'd have to keep it in a room with a really level floor..." I gather that other factors are more important than the minimal-average-signal-path-length which would tend to make the machine spherical. Of course, I could be wrong. Gordon was mumbling something about peripherals shaped like giant bowling pins...

### Six Unexpected Encounters

Colorado is a good place to run into people you didn't expect to see.

I bumped into Jake Thomson in the little ice cream parlor in the Hilton. He started the fan group TALOS back at Notre Dame that lasted two years and faded out. We published a zine and attended the first Confusion together in 1975, but somehow never did connect up with the rest of SF fandom. Jake now foos with guidance systems at Martin Marietta in Denver. Gaffiated since I last saw him around '76, he nevertheless felt obligated to attend a Worldcon in his backyard...

Gene Olmstead is a Baltimore cousin on my mother's side of the family. Hadn't seen him since a wedding in 1979, though he had been in on the original Dry Ice Capades laser-ukelele-rock concert at Iguanacon. Unfortunately I didn't run into him until Monday of the con, but we did get to talk at the parties that night. He is an armorer, forging knives and swords, and hangs out with a medievalist group back East.

I spoke with Kevin Dunn a few times during Denvention; hearing that I'd be around for a few weeks, he kindly invited me to a DASFA meeting later in September (which I wasn't able to make). Upon getting settled into Paul Acker's East Denver apartment, I sauntered outside to explore the neighborhood. Lo and behold! half a block away was a branch of the legendary bookstore, Mile High Comics. I was startled to find Kevin managing the place-- he hadn't told me what his job was.

I met Jon Singer (at last) during the con. Ten days later, on my first night in Boulder, I encountered him in a bookstore.

As I chatted with Chris McKay (see last issue) in his Gamow Tower office, my old housemate from MSU stuck his head in the door. Mike O'Callaghan, sitting in his office, had heard my voice down the hall, and decided to check it out. (That's how they caught Alfred Packer, you know. ) He took his MS in 1978 and ran to California to work on missiles, and I'd thought he was still there yet. But this fall he entered the University of Colorado to get a PhD, and more power to him. Historians of my Michigan State days will recall Mike as the short gent with the sandy moustache, equally at home with classical guitar or classical mechanics.

On my last afternoon in Denver I browsed the Art Museum, that alien castle, then hit the nearby Public Library for some quick research I wanted to do. Who should be coming up the stairs to the third floor but Frank Bynum of Dayton? I'd seen Frank at the Worldcon, but in the intervening two weeks he had gone home, then flown out for an interview with Martin Marietta. We had lunch and hit a bookstore before I had to catch a bus leading to the airport. He works on re-entry vehicles for the Air Force at Wright-Patterson-- but perhaps he may not always work there, hmm?

#### Not Until They Get Deep-Dish Pizza into Orbit

Lately, instead of continuing to dream about it, I've tried to find out more about working on space flight. Since I was but a tad I've harbored a desire to contribute what talents I have to the effort to get established in space. I have enjoyed working in my first job, in high-energy physics, a lot, and I've learned a lot too. But (he said, pushing thirty) other careers are worth exploring, and one of these years I may actually go out to find employment with my first love. So I have been keeping an eye out for interesting companies, working conditions, friends in the business, and so forth.

Ran into Dennis Skelton at a party in Boulder, and upon discovering he is an optics designer for Ball Brothers Aerospace Division, coaxed him into giving a tour. Yeah, they make Mason jars, but they make instruments, and sometimes entire satellites, too. Most of the Orbiting Solar Observatory series, the new "built in Boulder" Solar Mesosphere Explorer, most of the solar astronomy stuff for Skylab, star trackers for the Shuttle, the beautiful Infrared Astronomical Satellite Telescope, Space Telescope, High Energy Astronomical Observatory, and Galileo gadgets were built at Ball.

The next business day I showed up at Dennis's office and talked to him about Ball and his job. The division has about 2000 employees, mostly engaged now in building instruments for civilian space projects-- but they are angling for more military work. Dennis has an M.S. in astronomy and was hired three years ago. Ball likes to hire physics and astronomy people and train them to do particular jobs because that's cheaper than hiring, say, an experienced engineer to do ultraviolet optics design. It is a small enough company that people get moved around to work on a variety of different projects rather than becoming narrowly specialized. Dennis has worked on everything from cryogenic infrared optics to standardizing the light output of automobile taillights.

I must admit I was intrigued. I do want to work in the space business someday, and Ball had a lot of the things I wanted. There's variety, they hire people with my background, they do very interesting work, and they pay a lot more than I'm making now (although a bit less than most outfits in the aerospace industry). On top of that, I liked what I saw of Boulder very much, and I have plenty of friends in the area.

The catch is that I'm even more fond of Chicago, and I want to stay here if I can. However, the amount of aerospace activity here is negligible. So sooner or later I'll have to make a choice...

### The Stars Never Set on the British Empire

During a visit to Evanston I wandered over to the Northwestern campus and poked around in its superb collection of astronomical journals. At last I was able to scan recent issues of one that I have always wanted to read: the Journal of the British Interplanetary Society. While at Notre Dame I had occasionally dipped into early issues of this magazine from the late 1930s onward. At that time the BIS was way ahead of the state of the art, investigating all manner of astronomical ideas and even designing in detail a manned spacecraft intended for a lunar landing. (For an account of those years, see Arthur Clarke's essay "Confessions of an Armchair Astronaut.")

I'm happy to report that the BIS has not lost its lead. Space flight is now an industry, of course, and JBIS runs plenty of papers on Spacelab designs, image processing, and other "real" applications. But there is also plenty of space devoted to dreams-- relativistic flight, interstellar travel, contact with extraterrestrials. I must subscribe to it!



I Xeroxed furiously and took some notes. Some of you may already know about Project Daedalus, the design study for a laser-fusion pulsed rocket probe to Barnard's Star. The final report is still available for \$15.00 from the BIS. Recent papers have covered such topics as these: Spacecab, a small, two-man winged shuttle launched with upgraded Ariane hardware. A "runway" to aid the takeoff of interstellar ramjets; tanker ships lay down a chain of fuel pellets for a fraction of a light-year, enriching the concentration of fuel in space and so enabling the ramjet to light up at lower speeds. A "Super Ball" drive: like the laser-assisted light sail, except that the sail is replaced by a means of bouncing massive objects off the ship, and the laser is replaced by a catapult firing these objects at high momentum. A series of articles by R. Freitas on self-reproducing interstellar probes (apparently Frank Tipler was ignorant of these when he published his own papers, which I mentioned a few mailings ago).

One very useful item was a bibliography of articles and books on interstellar flight and extraterrestrial intelligence, compiled by the ubiquitous Robert Forward and others, and published as the June issue in 1980.

Have You Ever Seen Me Skimp on Meals?

High energy physicists often drive beat-up old cars, wear threadbare clothes, and skimp on meals, yet they are the caretakers of the world's most expensive science.

-- Ron Kotulak, science editor of the Chicago Tribune



ROSCOE

SEZ:

NOMINATE

FOR A BETTER

HUGO  
AWARD!

A Solitary Exhortation, and a Bevy of Recommendations

(AN EXAMPLE OF THE DREADED "FLOATING SUBTITLE".)

Soon the Hugo nomination ballots will be arriving in your mailboxes. I urge you once again to fill them out and send them back. I'd like to think that the Hugos would be better and more interesting if there were more input from us.

Everyone must know by now that I regard the nominating round of the Science Fiction Achievement Award balloting to be more fun than the final round. Briefly: you can nominate anything or anyone you like, and you personally have much more influence in certain categories.

I trust your good taste will guide you (and of course I'd like to think that cultivated people of taste would nominate the same works I would, heh, heh). But I'd like to name a few good items you might consider nominating. This list will NOT be identical to my nominations, just some stuff I've run across. I would be happy to receive and consider your suggestions for nomination. (I consulted with Uncle Dick Smith to help sort out this list.)

Novels-- I found Niven and Pournelle's Oath of Fealty thought-provoking. Haldeman's Worlds was pretty successful for me. Phyllis Eisenstein just had a good SF adventure, In the Hands of Glory, published by Timescape. Julian May's The Many-Colored Land got favorable reviews, but I thought its promise got bogged down in a pulpy conclusion. Barnes and Niven will have to try harder than Dream Park for Hugo quality.

Short fiction-- As usual, I don't keep up much with this, except to read stories by people I know. Jeff Duntemann had "Silicon Psalm" in a February Asimov's, and Phyllis Eisenstein had "Taboo" in a June Analog. But her "In the Western Tradition" in the February F&SF is much better. Dave Levine has promised to publish a list of short stuff he liked this year.

Dramatic Presentation-- Flying Karamazov Brothers? The TV version of Hitchhiker's Guide to the Galaxy seems fully up to the standard of the radio version. I liked Dragonslayer but didn't care for Excalibur. Superman II is not eligible any more.

Nonfiction-- This infant category is a catchall, but it does catch some good stuff. Stephen King's Danse Macabre? Leo and Diane Dillon's new art book?

Fan Writer-- Gee, I'm awfully fond of George Ewing and Chuck Ott. Apahacks, alas, don't count.

Fan Artist-- Chris Cloutier, Kurt Erichsen, Mary Lynn Skirvin... golly, I have a lot of favorite artists, including most of the people who cartoon for GT. Of those who've been on the ballot before, I think Joan Hanke-Woods deserves the rocket at last, with Stu Shiffman a close second. Alexis Gilliland is still funny, but he's already got one...

Fanzines-- Ah. You know my preference here. Its initials are PT... but fanzine fans are rallying behind Glicksohn's Energumen 16. It's good, but didn't impress me as a blockbuster. File 770 is worth a vote. The oddball grouchzine Patchin Review is interesting, but I won't nominate it.

Finally, how about a Special Committee Award for the Shuttle? Or is it now too mundane, like color TV, nuclear submarines, and dirty movies via satellite?

#### Mailing Comments

Marty-- Great cover!

GTB-- Can you and Marty together manage to shame us all into contributing a lot of pages? Note that sending the mailing late only contributed to a positive feedback effect: I spoke to some people who didn't have time between receipt of the mailing and the next deadline to write a decent zine and reply to all the material in the mailing. So they skipped the next mailing, or minacked out. As I've said before, I really don't think it was a good idea.

Rod-- The indoor blimp is mind-boggling, though it might find my apartment a bit cramped for aerial gamboling. How about a mooring mast mounted on your bedpost? A tiny TV camera, for monitoring neighborhood peewee football games? Depth charges to sink toy submarines? (I think this may be the same toy John Hall mentioned in Pyro 26.) // Ringworlds, rigid Dyson spheres, and bucket worlds are all impossible as far as we know, because no known material can provide the tensile strength needed to hold them together. It would be instructive to do the statics calculation to see just what forces are involved. (Rod? You're a civil engineer....)

I continue to be critical of your AFV (armored fighting vehicle, gang) engineering. Many tanks are indeed submersible, but none that I know of have ballast tanks! Work out the volume of air needed to float a forty- or fifty-ton vehicle the size of a large truck, and you will see that the tank would become impractically large. Manuvering in tight spots and presenting a small target silhouette would become impossible, and the ability to submerge and sink at will-- rather than simply crawl across the bottoms of rivers and lakes-- is not useful enough to justify these impediments. (I recall that when Gordon Dickson introduced armed submersible bulldozers in Tactics of Mistake, I laughed all the way through, thinking the idea was enjoyably daffy.)

Something else has been bothering me. Your "flyoff" of the two tanks seems to be using live ammunition under real combat conditions (at least as you portray them). Isn't there a good chance somebody will get killed here? Are your engineers in fact trying to kill each other? In revising the story, you must provide a plausible justification for this. Difficult, if you ask me. Would you, Rod, accept a high risk

to your life in order to demonstrate, say, a new traffic control system?

There's a good book on armor design I read in my model-building days: Design and Development of Armored Fighting Vehicles. It's by Richard Ogorclewicz, if I recall the spelling correctly.

Valli-- I was glad to see you enjoying Denvention, but I too found it less than I had hoped. I had some downright dull nights, wandering the hallways of various hotels utterly convinced that somewhere was The Party. At The Party were most of the fans I know, and some more whom I didn't know but who were really wonderful, and all were rubbing each others' backs and performing astrophysical calculations and singing the great old songs, and everybody was wondering where the hell I was. All I had to do was find it. I spent a couple of nights searching. No evidence, however, turned up that The Party actually existed. Most of my friends seemed to go to bed early or wander in search of The Party themselves.

You're lucky you missed the Trivia Bowl, which was quite a bummer. All the contestants were good sports; many of us knew one another from previous competitions. The organizers were another matter. They behaved at times in an unquestionably hostile fashion toward the contestants, and seemed to do their best to take as much fun as possible out of the game. It looks like the Denver group will never run one again... I have great faith in the ability of the ChUSFA group to run an excellent TB, and we can only hope that the scrambled SMOFs running the Chicon take them up on their offer.

Just whom do you expect to compile a Chicon restaurant guide, if the Chicago fans interested in good eating and fannish welfare don't do it? Hmm?// See my comments to Greg for a discussion of the AT 14 cover. // Berserkers are becoming about as numerous as cons for some of us. I went to Ishercon, doug&gretchen's Memorial Day Thing, the Rochester berserker, and the Cloutier-Thayer wedding this year. I missed the affairs at George's and Cap'n Al's ~~but I never could schedule one right away~~. On the other hand, up to 1 November of this year I've only attended six bona fide conventions.

Bill R.-- Mousy kith need no zoom tube rancor.

Jamie-- But code "SMOOTH.ZERO" may run in one K.

Mike-- One could develop a taste for your style (especially if you wrote more!). To me it is likeable New Journalism. // How did you expect Alice to drive two cars from Champaign to Rochester? Remote control? Telefactoring?// The Worldcon-at-a-university idea is not bad, but Labor Day is a poor time for a lot of schools, I think, being very close to opening day. What conventions have successfully used this ploy?// I didn't know that Freff

and Phil had taken over the art show at the Worldcon. Can you give more details? // I am glad you ended your rap on Rochester cons with that line: "I'm not serious." Lie down for a while, and maybe it will go away.

Jerry-- You should recall that an axe almost got used on Shalmaneser, the computer in Stand on Zanzibar, though it wasn't wielded by G.T. Buckfast. // Your purchase of an Olds Omega Brougham reminds me of an old joke.

Man: Doorman, call me a cab.

Doorman: Okay, you're a brougham.

Man: Why did you call me a brougham?

Doorman: Well, I couldn't really call you hansom.

Wow. Your mailing comments cite both title and author of each zine. No puzzles to solve. // Perhaps you came in late. Kalamazoo has been a suburb of Chicago since the early days of GT, 1976 at least. Chambana, Houghton, Rochester, Milwaukee, Ann Arbor, East Lansing, Minneapolis, and Los Angeles came later. // Boy, you've provided me with a lot more comment hooks than usual, and more than those other characters who minacked...

Angel-- Glad to see you back. I see that your Change of Address form got you minac credit both here and in Windyapa. I always did want to present my work to a larger audience...

Donna-- Musical Bedrooms? "When the music stops, everybody fall asleep!" // I hope Uncle Marty's Story Hour has improved since I dropped off those half-dozen books last month.

Greg-- Thinking of going into the Consulting Orbital Dynamics game, eh? I used to harbor ideas of strapping on a backpack and roaming the nation as an Itinerant Accelerator Operator. "Pardon me, can you tell me if there's a cyclotron or a Van de Graaf in this town?... Yeah, I kin run a tandem. Used to run the eight MV machine back in South Bend. Only seven and a half, really, but if we tuned it up real careful we could stick some extra megavolts in, maybe eight, eight point three, with only two-three sparks on a shift... No, thanks, I don't care to stay on. Not my style. I like workin' with the machines, but I got to ramble... A song? Sure... this here's one I learned from ol' Dick Feynman back in '72..." Could we team up? Might make a good TV series.

Speaking of which:

/32/ MOVIE-- Comedy/Drama

"Mr. Sleppington." (1936)

Claude Rains in a humorous vein as a tailor who dreams of opening his own laundromat, "George Sleppington Washed Here," with the maid who rolls him (Bette Davis).

Say, what about giving those Eskimos phased-array antennas? Someday they may be cheaper than steerable dishes, especially if the comsats occupy a limited portion of the sky. //Yeah, the starship cover does look kind of New Wave, doesn't it? The von Hoerner article framing the ship actually shows how difficult interstellar flight is and essentially ridicules the notion. It stuck in my mind when I read it years ago. and my natural reaction as a science fiction buff was to deny it. The cover is an expression of this feeling. Despite Valli's remarks, I don't think Picasso or the Cubists influenced me. I am a little sheepish to admit that I paid any attention to "new wave graphics--" but I sometimes think of the cover as my Punk Rocket.

On erasing discs: Andy Cohen once borrowed a Grateful Dead album from me to tape the music off it. When he returned it, it was a smooth shiny platter without any grooves on it! I demanded that he return the music immediately. // I recently saw an Enquirer headline that read

AMERICA'S BIGGEST PROBLEM: SHYNESS

Two Out Of Three Suffer From It

I had always assumed it came with the territory, like death and taxes. Ah, well. Tell them to try Powdermilk Biscuits, which "give Shy Persons the strength to get out and Do What Needs To Be Done." //I wasn't too happy with the repro on Pyro 26 myself, because pasteup lines and edges showed up too much. Jeff couldn't get one of the fancy copiers, and had to settle for a crummier one.

Keith-- I'm afraid you got caught in the squeeze between Fermilab and the Federal budget. The Department of Energy has been asked to cut budgets at a time when Fermilab and Brookhaven are committed to big construction projects. What is worse, the President and Congress haven't yet seen eye to eye on a Federal budget. Right now the whole national government is surviving on the money granted us by the infamous continuing resolution-- for Fermilab, about the same money we were getting last year at this time. But since we don't know what our final budget will be, we can't even plan as far ahead as January. We're supposed to do our final 400 GeV run for a few months in early 1982, and we are going ahead with preparations for it. The 800-kilobuck-per-month power bills, however, will have to be met with the Fiscal 1982 budget.

So among other measures, the Fermilab hiring freeze, which was off briefly at the end of summer, is back on again. There is hope that a lot of the expense-cutting can be done just through attrition (people leaving their jobs at the normal rate, and not being replaced by new hiring), but there are rumors that layoffs are being considered. At this writing nobody knows whether we'll get the extra operating money, needed for any 400 GeV running next year. In any case I doubt that hiring will be unfrozen, so you're screwed. I know Todd Johnson is considering applying this winter, and I guess he'll have to look elsewhere too.

I'm glad you got to go to Uicon. Nobody who attended has said what Jittlov's future plans are. I presume that if he had gotten backing to do a feature film, we would have heard about it.// Re the social position of scientists: when I heard that Carl Sagan had been named to a list of the twelve sexiest men in America, or something of the sort, I was delighted. I anticipated that scientists might now become the subjects of beer commercials, grand marshals of parades, perhaps even Squares on "Hollywood Squares." Jeff Duntemann shot me down. He pointed out that scientists set an example of thoughtfulness, reason, and attempted objectivity that is far more valuable to society than the tinsel and glitter that I was gleefully awaiting. He's probably right. The world does need less flash and more careful thinking. Even so, science does seem to have grown its own fan magazines in Omni, Discover, and the like.

Paul-- Much inky boze on astronomer debut.

Dick-- The ChUS'A library index is on a disk on Mike Bentley's account on the U of I Cyber, or at least it was last summer. I have some tedious 300-baud printouts of it. // I, too, have sometimes had trouble getting Jeff to publish stuff soon after submission, and so has George Fwing. But Jeff never did make any promises about that, if you look at history. Part of the fun of guest Pyros is that different people with different tastes and habits sit in the editorial chair. If you get fired up enough, you can even volunteer, and get it done your way, as Cap'n Al has. // I think you are too grumpy about GT and Pyro, but it's a free country, and you are certainly allowed to be grumpy. (What does a Soviet scribbler do when he's dissatisfied with his samzidat editor?) // Re Greg & Dutchin: Don't forget Alice and Phyllix! // A techie computer net sounds juicy, but I don't have a machine even yet...

A few notes on Fanzines: One excuse for not attending the Business Meeting was that there were no motions to straighten out the fanzine Hugo situation which I thought were worth voting for. (The major reason, of course, was lack of sleep, as usual.) // In Energumen 16, and outside of it, I keep hearing from fanzine fans that fanzines are dying. While I am not a heavy fanzine fan, I'd certainly miss them, so I hope this feeling is wrong. // I voted on the FAANS this year, mostly for artists where I feel best qualified.

Bill L.-- The Shuttle and the Dyna-Soar? Are you gonna write your history of space transportation backwards? // I see that Satcom 3R has been orbited successfully without blowing up.

Now.

My apartment is a wreck.  
My bills are piling up.  
I need sleep.

But at least I've forged a seventeen-page apazine!

It's late on Saturday night, the 5th of December. I wasn't going to contribute to this disty, if for no other reason than I just postmailed at length, and I don't want to get you too tired of me...

but Valli & I got home a couple hours ago and found 17 pages of ditto masters and a note "Please run these and ship to Renee quick!"... and so I might as well try to get another page into the batch when I print them tomorrow morning. Whatever, this is

Smith's

CORONA

for ApaTech  
#16

and, as usual, it from Dick Smith at 1116 Hull Terrace, Evanston, IL, 60202, and, not at all as usual, is an instant zine drafted directly onto master (so it's not my fault, gang!).

The reason we had to find Bill Higgin's masters on the doorstep earlier was that Valli & I were up in Milwaukee picking up my new car. You've read about several of my automobile adventures already; hopefully this will conclude them for a while. Since the departure of my ugly-but-wonderful Capri (oh yeah, the green monster that got stolen and stripped for parts) I've been driving the tired '74 Ford Maverick that used to belong to BillH. He got a newer car thru some deal I didn't quite follow but involving his folks, and his Maverick (remember the one that had its door stolen, and the hood that blew off...) was sitting idle. He was just starting to mumble about selling it to some sucker when I needed transport desperately, and took it from him for a song (and a couple hundred bucks). It was already worn out... now it's an amazingly tired car!

The new car is a light-blue 1981 diesel engine VW Rabbit. While technically new (and therefore qualifying for the cheaper "new car" loan rate), it was actually the dealer's servicemanager's car, and has a few thousand miles on it. It looks like it will be a good car for the kind of long-distance congoing we've done alot of, and will hopefully relieve Valli's car (and therefore Valli) from alot of load. It's an interesting car for a number of reasons (atleast, interesting to me...) which include: it is a front-wheel-drive car, with the engine mounted sideways and all the handling changes that front-drive is supposed to bring; it's diesel, which is kinda strange running and includes having to wait for the engine to preheat before starting (which takes only a few seconds, usually); it will be my first real new car and I'll be several years paying for it. We'll see how it goes.

No mailing comments this time. Instead, I'll comment on the possible nominees for the Hugo awards. Considering how long it takes for the apa to get collated & delivered, this will probably be my only chance to do so before most of you file your ballots, unless I go ahead with my threat of doing a mass mailing to the entire ~~mob~~ Mob List. BillH & Gretchen both seem to thing I've beaten on that drum quite enough, thank you, and so I have some reservations about doing the mailing, even tho certain other people will certainly be flinging their opinions at the membership. You all, ofcourse, know enough to take me with a little salt....



Smith's ~~XXXX~~ Corona  
ApaTech #16

Hallelujah Noel, year 2.  
Be it heaven or hell,  
The Christmas we get we deserve.

((It's Sunday night, now. I've had a chance to look at BillH's recommendations. Fortunately, I agree with most of them. The comments that follow were thought out before I read them, tho, and may duplicate them slightly.))

Non-fiction: The Non fiction book award was made permanent in the business meeting last year, over some opposition that seemed to feel it was a "catch-all" category. I voted for it, even tho I'm not sure exactly what it should encompass. The obvious candidate for it is Steven King's Danse Macabre, which gives King's views of the origins & motivations of the horror story. I just finished it, and enjoyed it quite a bit, altho it is not the dry literary criticism that some would prefer.

A second candidate, altho it's farther from SF than the previous, is Tracy Kidder's The Soul of a New Machine. You shouldn't have to look very far to find a favorable review of this book; it has gotten good press both from the computer trade press and the literary establishment. Just in case you haven't heard something about it, the book describes the design of a new CPU at Data General. The author is a business writer, and makes a few technical blunders (or atleast some innocent misunderstandings), but on the whole, is surprisingly perceptive. I'll counter arguments that it has nothing to do with SF at all with the simple statement, "It has just as much to do with SF as Cosmos does."

Short fiction: Two things come to mind immediately. One of the hard parts of these categories is puzzling out which piece goes in which category; I haven't done it yet. It's hard enough to think back over the year to make sure you're not forgetting something good. I'll be scanning the pile of prozines for things I can even remember (a good sign, believe me) as soon as 1981 is last year. But I can think of two right now...

"In the Western Tradition" by Phyllis Eisenstein appeared in F&SF in February. Since one member of this apa commented to me, "I don't read fantasy", I'll take this space to point out that this story is straight SF, altho it certainly isn't gadget fiction. ((Actually, in my role as chairman of the "Phyllis for Hugo" adhoc committee, I should be plugging all her works this year, but I'll settle for a vote for this one, especially since I'd be voting for it anyway!))

Vernor Vinge's "True Names" was half of Binary Star #5. This is a fantasygaming/computer story, and should have gotten alot more attention because of it, but the Binary Star series was particularly under-noticed. Rather than describe this one, I suggest you read it, as I've already had arguments with BillH about whether the human-computer interface is reasonable as described in the story.

Novel: I can't find anything to get excited about. Phyllis's In the Hands of Glory isn't too bad, but I'm not sure that it's deserving. Than again, neither are Worlds, Dream Park, Oath of Fealty, or Madwand. Those are all possibilities, tho, as I can't think of anything better. Both Madwand and The Claw of the Conciliator are sequels.

Fanzine: Come on over, and read my copy of Energumen 16, if you think Pyro looks good.

*Pick*

(or, Merry Holidays in Green and Red Binkies to all of GY11)

Someday I Will Make a Binkle,  
I Promise!!

//// Milwaukee Bar Invaded by Shuttle Snatching Patrol ////

"What's it, Dick, we've got to see the landing; this radio stuff just won't do!" With a somewhat pained look on his face Dick suggested that I park the car off I found anywhere. Well, sure enough, there was a parking place.

When I got home, I parked my car in the lot and went back to the bar. I found out that the car was not there. I was sure enough there was a neighborhood bar, and there was a parking space and so he and I ran into a local neighborhood establishment with a few minutes to touchdown left. We stood and cheered at the TV with the locals when the Shuttle made as gorgeous a landing as its first return, and then promptly exited again, off to the wedding. I must say that the people in the local bar certainly were friendly enough as I don't recall any strange looks being given at the two dressed up ~~folks~~ people who ran in off from the street, watched the television and then ran out again. And many thanks to that obscure establishment without which I would have not seen the actual Shuttle landing. And we didn't even stop long enough to buy a beer. I knew Milwaukee was friendly and a nice place!!

Seriously though, perhaps now humankind dare have some hope for the future beyond the war toys and games that the politicians are playing of late. Although the mission was cut short, the Shuttle has proven itself true and more than just a lucky fluke the first time round. Perhaps the tomorrows predicted by Clarke and Asimov might just be closer than we have ever hoped before. Perhaps they are also farther off than our worst nightmares have feared. But I will opt for the hope and dreams of the spacetime sky for now.

Him, now of other non-techish things I have done of late, a quick summary for your amusement:

Ann Arbor Sci Fd Fair

and bolster their student ranks. (I think most Appalachians can remember or still use the amenities of being a college student organizations - such as free meeting space, bulletin boards, offices, etc.) Actually, it went better than not and even had the usual con trappings - dealer's room, art show, programming. The con suite would have been nice but the homes of local fan were a nice party substitute. While I wouldn't call this con a real serious conac event, it was nice to see everyone in A' again."

ginal con report territory rather than rehashing twice-told reports.

## I-Con

High School Renunion No, that is not the name of a film I saw in November.

I actually did have a high school reunion and after much procrastinating, I finally decided to go and flingled Dick's company on the trip. Despite my preconceived notions, I did not recognize everyone at the reunion because after 10 years they had changed! I still am not sure whether I should be complimented or insulted by the comment made by my former biology and math teachers that I had indeed not changed a bit. Hm. Was rnce to dance again, though. Gave me a strange feeling of deja vu to dance to Moody Blues music again with the friend who had been my first boyfriend (who is now the husband of one of my best female friends from high school and the 2 of them are still very good friends of mine). But as another friend from high school, who is now a fan, and a few other good friends were there, the evening passed pleasantly enough. But one reunion was enough, I don't know if I would go through the effort of going to another. Good stimulus for self- and soul-searching, however.

## Turkey Day and Chambanacon

Turkey Day and Champanacon After driving to Detroit, having Thanksgiving with my family, Dick and I ~~didn't~~ drove 10 hours to Champanacon. Happily enough, the con was worth it; was probably the best con that I have enjoyed since Midwescon this past June. As traditional, a goodly number of teches were around, and Bill Higgins conducted a traditional G<sub>u</sub> sing with "Benson, Arizona" and other famous songs. I loved the sauna, and considered moving into it because I could breath again (my sinuses detest my family's dry over-heated house). A rather successful ranquet to the China Inn (?) was organized by Jerry Corrigan (a quick doff of the blinkle to him) that had good Seachuan food. I kept looking for Bentley and Alice though; old Champanafen faces take a long time to fade from memory.

And once again, on with the essence of this apa-hacking, which is certainly not the matter of this zine but the

\*\*\*\*\* Mailing Comments on ApatTech 15 \*\*\*\*\*

(or, everybody is a witch ....)

**Cover**

more seriously if the apa was distributed more seriously, rather than a month or more after the deadline? I certainly would not mind receiving an apa which consisted solely of a cover, blank 7oc and no zines if that is all that the OE had, rather than wait a month & 1/2 after the deadline for the apa to arrive. Then members might actually get zines done within the deadline and grace period, rather than 2 weeks after. But Marty, you did draw a cute cartoon. More, more!!

ToC Hey, 13 members contributed (counting the post-mailings/handings).

Not bad at all, and the 55 total page count is certainly a lot less formidable to read and MC than the 200+ page behemoths like Minnesota or the 100+ page jumbo size models like a local Chicago apa (yes, that is a slight complaint from me on a certain local Chicago apa which I wish was just a bit smaller. Oh well.). I find that my zines tend to get smaller as the apa size increases because I get tired of reading and trying to comment on everyone's single zine lest they feel left out; but it can get self-defeating. With SPINOFF, an apa that has oh, maybe 18 members and about 5-7 zines an issue, I tend to do longer zines because I don't feel intimidated by all the pages and pages of print in front and GOOD GHOD HOW AM I EVER GONNA WRITE A MC TO EVERYONE???!! Instead I can concentrate on what the fewer people are saying and write at more length. But what this has to do with ApaTech .... hm, well small isn't exactly bad, Renee. Don't be discouraged by the activity as I don't think ApaTech is going the way of the dodo bird. If ApaTech ever turned into a gutepill apa, the G<sub>r</sub> folks I know is that G<sub>r</sub> as a whole has tended to be less cliquish and less exclusive than some other fannish sub-groups. At G<sub>r</sub> parties members find other pleasant topics of conversation besides what people are currently involved with who at this con, or who is doing what with so-and-so (not that conversations like that permeate all the rest of fandom, but I have gotten so very tired of the fannish groups who do nothing but talk and write about who they either just after or have done this and that with). Then of course, this brings round the techie Myth Extraordinaire -- and of course techies do have sex. I don't know of any techie personally who is without it -- we all are male or female rather obviously, unless someone is doing one helluva job with body padding and makeup. Except for Cosmo, that is; Cosmo is definitely non-human and a robot. So \*gasp\* it's been actually said in print and I repeat TECHIES DO HAVE SEX!! But as to who exactly is male and female, well that I leave to the personal discovery and adventures of my fellow techies ....

Where was I? Oh yea, gutepill. Like I said, I was endeared toward G<sub>r</sub> for its polite and non-cliquish nature a long time ago. I have heard currently of some clouds gathering on the horizon that may spoil this non-cliquish conception of mine, but we shall see. I like reading zines that deal with matters other than personal crises exclusively. I may not understand them all the time, but they are at least interesting. The few times that personalities have clashed in the apa, well, words have flown, but the dust has settled rather quickly. Most of the members have always talked to each other and still are, from what I see. Those of us who don't talk to everyone don't do so out of spite, but out of lack of \$\$ to pay exorbitant phone bills. So, ApaTech contains a membership of intelligent, polite human beings who manage to converse about matters of a wide variety, above and beyond who is doing what with who at this con or this affair or this closed party, and for that I still grind out my zines, mince at times, but I always eagerly await the next ish. ApaTech, I wish thee well and a long life to come.

Rod Good gods, when I read The Legend of Hell House (or Hell House as I think the books was initially titled) I got frightened so much that I had nightmares in broad daylight just thinking about the book. The movie would probably have immobilized me for days. In case you haven't noticed by now, I am not a horror fan. My imagination is much too active at night for my own good now, and horror books and movies are just adding fuel to a too active fire already.

Mike Well, um, er, I have always wondered what 9 months in the life of a Bentley was like and now I know (March 20th to Dec. 1st is app. 9 mos.) Glad of course that your move worked out so well and that Rochester is working out for you and Alice.//Does "we (you) no longer own a Vegan Sub" mean you sold some car or vehicle? Which one? Good luck driving in the Rochester winter!!//From what I have heard from you and other G<sub>r</sub> attendees, Urcon did alright. Glad to hear it and I am rather sorry that I couldn't make the trip out there. Jittlov would have been very interesting to see/hear, and I am still a blushing \*neo\* when it comes to Animov as I would really like to hear him give a talk someday (I arrived in fandom too late to catch him on the CoH circuit).//You want to throw a con, eh? How about coming back and throwing one in Chicago? Why not, we only have 2 now, and I is useless

since the 82 worldcon comm got their grungy little petty paws on it and the other still seems somewhat media-oriented (but we shall see), so another Chicago con would be nice. Har. I know this great little purple hotel in Lincolnwood (or is it Skokie) that is crying for a con ....//Hi to Alice (I know she is out there somewhere....Alice, oh Alice, hi there Alice.)

Bill R No, Bill, I don't know what happens in Chicago on Thursday Nights! Let me guess -- the John Hancock does a strip tease? The Sears Tower does a shrinking act? Mayro Byrne and hubby do their latest Home Sweet Housing Project Home number in a brothel on Broadway (truly in keeping with Janie's latest crackdown fad -- Operation Angel -- which is aimed at suppressing prostitution in Chicago)?// Say, since you amble up north at a rather frequent basis, what do you think of Milwaukee? I find that I rather like the place myself, but aside from Dick, I don't know anyone else who likes it. Compared to Chicago, Belleville, ~~Milwaukee~~ and other \*exciting\* places you have lived, what do you think of it?

Paul \*hi there\* Yup, I thought Denvention was rather mediocre as worldcons go, although it made a passable imitation of a regional con. And it certainly was the company that made that con for me, although the Rue Morgue mystery bookshop/dealer in the huckster's room was a nice addition, I thought.

Jerry Can I have a ride in your new car? Huh? Please, please? So what did you name this one?//Thanks for the new job congrats. I am still trying to figure it all out, but according to my overseer here, I am doing fine, so I must be doing something right.//Re yr ct "I fully expect you to be changing the Moon's name to Evanston within the year": remember the WindyApa cover with the Judy Chicago planets that said exactly that?

Angel I hope your new apt. has worked out, and it has been nice seeing you lately whenever our paths have crossed. I know that the U-Chicago is a very busy and demanding place, but it would be nice to see you around again when you could spare the time. Til then, good luck in your endeavors.

Donna Re yr ct that "life here (at Isler) hasn't always been all I'd expected, and sometimes it's much more than I'd expected": true, true. Life at Isler can seem very much the center of the universe (or at least the G<sub>r</sub> universe) I am sure, but it, like Rochester and Chicago, is only part of a greater whole of fandom. Don't let the little things there wear you down, but likewise remember that the center of the universe is not always where we think it is.

Bill H. I liked your cartoons and found the rest interesting, but other than that, no other comments.

Jamie It's nice to read of you again, but more news, please! It would be very nice to read more of you!!

Keith Well anytime you feel ready to move to the midwest, you know you have fannish friends here who would be happy to see you around. Or has California claimed you as one of its own?//Re Vermilab cut! I was very sorry to hear that when you told me, for a variety of reasons which include that I know you had been hoping for it and I hated to see you disappointed, and it would have been very nice to have had you around Chicago again. But now all I can do is wish you the best of luck in finding what you would be happy at, and maybe the midwest might win out yet.//Interesting stuff about good/bad.

Bill L. I do hope things turn out well for you and wish you luck as well.

Someone as sweet as you has got to have good things happen to them (I stubborn believe so, anyway).//Re yr ct me: I remember Soupy's original show on WXYZ-TV in Detroit. My parents and I liked Black Tooth and White Fang lots (or else I liked them lots and since I was a child, my parents acted enthused too.)

Dick Since I have read this zine 10 times over at home, what much else can I say? Your page 1 fillo might have done better in red, but that would have made using the mineo even more complicated I think. The COM seems to work pretty well, and \*eigh\* maybe even someday I will learn how to do it.//I really liked your stickur!! See, educators are good for something! Without teachers, there would be no teachers' stores, and there would be no goodies for you to put in your zines!

In support of the Sierra Club, Fanchild in the Promised Land #7 is proud to present

WATT GOES UP,  
MUST GO D

O  
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whose discontents are the compilation of Keith Thorne, mount-struck fan in search of a new high. When not hiking, he usually resides at 2608 Vanderbilt Lane, Apartment 3, Redondo Beach, California 90278 with a ringy-dingy thingy at (213) 372-9183

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## 9000 FEET AND CLIMBING

So what do I do when I'm not bitching and moaning about my career and my lot in life? Recently I have decided to try to enjoy myself by indulging in mountain climbing and hiking via the Sierra Club. For those unfamiliar with the organization, the Sierra Club is a nationwide conservation organization with membership of almost a quarter million. They have been responsible for the "Dump Watt" drive(hence my title) with a petition of over 1 million signatures calling for his removal. But enough of politics. The Los Angeles area, as opposed such rugged terrain as the Illinois prairie where I was previously ensconced, is surrounded by hills, mountains and wilderness areas which you can see from the downtown area about three times a year. In a year and a half here, I had not once travelled through any of these regions, except for a "star party" up at Mount Palomar. How can I justifiably complain about Los Angeles traffic and crowds with these peaks only a short drive away. I decided to rectify the situation posthaste. Luckily for me, the local regional Sierra Club has a membership of over 30,000! This means that their schedule of activities has 10-15 planned events every day of the year! After attending an introductory meeting whereupon I obtained a guide there was no stopping me. First, a quick inventory of my belongings revealed that numerous items from my Midwest winter student days would be quite suitable for day hikes in the relatively benign conditions of the local Angeles National Forest, home of the San Gabriel Mts. My lug sole boots, wool socks, backpack, and sweatshirts would be fine. To complete my outfitting I headed for REI Co-op, a outdoor equipment store. It is amazing the technology used these days. Besides down, there is Hollofil II, Thinsulate, and miracle fabrics like Gore-Tex with allows sweat out but is completely waterproof! Hiker chic is a lot like the prep look, except with less garish colors and some nylon. Wool is verrrry big. Prepared with water-filled wineskin, I headed out one Sunday morning at the ungodly hour of 5 am. I met the somewhat motley crew at the car-pool point, ate breakfast and then headed

## Viewing L.A. in future fiction

**OATH OF FEALTY** by Larry Niven and Jerry Pournelle (Timescape/Simon & Schuster: \$13.95) © L.A. Times

Five thousand years old, revived by advances in public health, communications and transportation, the City seems on its last legs today, at least in America. Rather than abandon it, however, why not take it a step further, into a self-contained unit with state-of-the-art technology, the latest twist on utopia?

Todos Santos, two miles square and a tenth as high, rising from a burnt-out ghetto in 21st-Century Los Angeles,

Reviewed by David N. Samuelson

suggests Gerald K. O'Neill's space colonies and Paolo Soleri's arcology. Its inhabitants enjoy security, technology and community in lieu of traditional privacy and democracy.

Two outsiders—a television newsman and a Canadian developer—tour this stationary starship run by "free enterprise" feudalism. With them, we meet the inner circle: the designer, a vice president (black), the city manager and the director of entrepreneurial activity (female). The latter two have implants providing direct access to the

central computer; the pot of plot also is peppered with gimmicks, allusions and quotes from other science fiction.

To keep the pages turning, these cardboard characters are involved in a pitched battle with environmentalists, a jailbreak, a kidnaping, confrontations with petty crooks and Los Angeles politicians, and sexual encounters (some "telepathically enhanced"). This melodrama punctuates the conflict between old and new life styles, a strictly one-sided affair tersely summarized by the slogan "Think of it as evolution in action."

If the story, style and characters are negligible, the concept is worth some reflection, if not completely in accord with the author's philosophy. Can a modern city be made more livable with technology, strong government and profit-making incentives without sacrificing individual rights in a pluralistic society? Their answer is yes, but only for the self-selected privileged few.

Samuelson teaches courses in science fiction, fantasy and utopian literature at Cal State Long Beach.

for the hills. It was a 10 mile hike over three peaks starting at 7000' with a max altitude of 9200'. The clear, cool air sure felt good to my lungs. The first one, Mt. Throop, was named for the founder of CalTech, which made my discussion of the quark model as I hiked up seem oddly appropriate. The group was about even split between men and women, with two Caltech grad chemists, two nurses, various aerospace engineers and a somewhat crazed leader or two. One nifty custom is that on all major peaks over a mile high there is a canister at the top with notebooks for you to sign your name and date in. I shot a whole roll of film that day. The air was clear enough to see Santa Catalina Island over 60 miles away peaking above the clouds! I thoroughly enjoyed myself. I followed this up by joining another group for Thanksgiving brunch on a mountaintop, where I brought wine, French cheese, crackers, fine chocolate, everything but the red checkered tablecloth. Champagne corks really fly when jostled upon one's back up a three mile trail, and are opened at the rarefied heights of 5400'. To be really disgusting, I had Thanksgiving dinner at an apartment four blocks from the beach, which we took a stroll on!

BUT THIS FILM HAD SUCH PROMISE . . .

Time Bandits (selected theatres) is one of those films which I wanted so desperately to succeed. Produced by members of one of my all-time favorite group, Monty Python, it was passed from distributor to distributor for a year or two because it didn't fit any label. It was ostensibly a children's film but strove to never be cute. It jumped from setting to setting with wreckless abandon, but each scene was incredibly detailed. The closest you could come was fantasy, but it didn't have a happy ending. When it first appeared it had all the looks of a sleeper hit, grossing millions its first weekend. But beyond all this, how well does it work as a film? The opening sequence is great. Here is this young child reading his tales of the Greek heroes, the knights of the Middle Ages, whose suffers under the stupidities of his telly-addicted kitchen-gadget-consuming parents? Don't we all remember wishing that some character from our fantasy tales would come crashing through our bedroom late at night? Sure enough a knight crashes through and rides off into the past. But alas it is only a dream. The next night the kid is prepared, with flashlight and Polaroid. But this one's for real, with five dwarves escaping with the Supreme Being's map of all the portals in the space-time fabric. And off we go, on a great treasure expedition across time. The kid is great, behaving with an aplomb and cool-headedness we so rarely see in the golly-gee crybaby wimps we usually encounter in Disney land. From there, unfortunately, the film falls apart into a mishmash of scenes, with insufficient coherence to figure out what they are or are not trying to say. The first encounter Napoleon played by Ian Holm at war in Italy. We see lots of lavish special unit realism but not much plot development. Then it's off to John Cleese's Robin Hood. Cleese gives his typical twit performance, and we find out what "that merry band" might really have done. Big deal. After being split up by the pursuing Supreme Being, the kid lands in the middle of a battle between a Greek hero and a minotaur. The bull is offed, and we find it is Sean Connery, toupee and all. He sweeps the boy into his court and the kid settles down to a life of a king's son (Unless you listen real close, you'll never figure out that Connery is supposed to be Agamemnon. They mix a few legends here, too). The boy is stolen away from this happiness by the dwarves, however. Not to spoil the rest of the film, suf-

## REPORTS FROM THE LAND OF HI-PHI:

## \$lashes in high-energy physics

The people at the Fermi National Accelerator Laboratory have not yet used up all the stationery that identifies the laboratory as related to the Energy Research and Development Agency. They have been scratching out ERDA and typing in "Department of Energy." Now they will have a new agency to type in, and they may well wonder — in fact they are wondering — what will happen to the major physics programs funded by DOE.

According to a spokesperson, Fermilab did not fare badly in the first round of Reagan budget cuts, getting most of what it asked for. That prompted some nervous talk (was it whistling in the cemetery?) to the effect that "these people understand the high-energy physics, not like that Georgia crowd." But the second round of Reagan cuts has bit — by 12 percent.

All this has to be taken in the context of a science that was underfunded to start with. All of the nation's high-energy

physics laboratories have had recurrent stretches of idleness in recent years for lack of funds. Even before the Reaganists took power the situation brought about the protest resignation of Fermilab's first director, Robert R. Wilson.

In a speech delivered at the celebration of the 50th anniversary of the Lawrence Berkeley Laboratory, George A. Keyworth II, the President's science adviser, spoke assuring "American preeminence in this promising and creative area of science while operating in concert with a strong European effort at CERN." In the past, American physicists have generally wished to equal and even surpass CERN (while cooperating with CERN, of course).

The other large physics area funded by DOE is controlled thermonuclear fusion. This is divided into two areas: magnetic-confinement fusion and inertial-confinement fusion. There have been rumors that the inertial confinement pro-

gram would be shut down, at least as far as civilian funding is concerned. (Some parts of it have military funding because of weapons applications.)

One of the people involved in inertial-confinement fusion from the beginning, John H. Nuckolls of the Lawrence Livermore Laboratory, took the occasion of winning the American Physical Society's James Clerk Maxwell Prize (given for achievement in this field at the recent meeting of the APS Division of Plasma Physics in New York) to pronounce a vigorous defense of inertial-confinement fusion as a prospective energy source. □

Quarks, quarks  
everywhere  
but not a one to  
isolate —

SCIENCE NEWS, VOL. 120

## Boring problems threaten LEP, HEP

*"There once was a place called Villars  
Where there was more than one star;  
They talked about LEP  
And the future of HEP,  
But decisions were made in the bar."*

The July/August CERN COURIER attributes this limerick to the physicist Hans Boggild. Villars is a town in the Swiss mountains where representatives of the European international physics laboratory CERN gathered to discuss plans for their newest project, the construction of a Large Electron-Positron collider (LEP) in what CERN COURIER called a "Club Méditerranée ambience." The picture is enough to make U.S. physicists cry in their drinks, that is, if they could afford bar prices in a Swiss mountain resort.

If LEP is built, physicists generally (and not only European ones) expect the future of high energy physics (HEP), aka particle physics, to be played out there in the environs of Geneva. LEP will provide collisions of electrons and positrons flying at energies up to 100 billion electron-volts. Out of those collisions are expected to come the things that will test and maybe prove the

next large step — in the language of old-time TV quiz programs it could be called the next plateau — in the unification of physics, the unified field theories, the grand unification theories that are expected to lace up all of physics.

CERN proposes to have LEP constructed and running by 1987. And the momentum rolls on with only one possible hitch: a court case brought in France. The plans are for LEP's tunnels, which house the rings in which electrons and positrons will circulate, to extend into the Jura Mountains on the French side of the border. CERN plans to build a test gallery into the Jura in early 1982. According to a report in the July 2 NATURE a court in Lyons has handed down an injunction against the boring on the motion of an environmentalist group, the *Association pour la Protection de la Nature Gessienne* (the last word refers to the Pays de Gex, the name of the small region involved). The decision turned on whether the proposed boring was temporary, which is permitted under the law protecting the environment in this part of the Jura, or permanent, which is not allowed. CERN considers the gallery temporary, but if the boring should show that this layout is feasible, the gallery would become a part of the final installation. The court chose to regard it as permanent.

CERN has not yet been officially informed of the decision. As an international organization CERN will get the notice from the French foreign ministry when the case has worked its way through appeals. CERN's French partisans hope to have the injunction annulled by a higher court, or failing that, to persuade the French parliament to change the law.

The CERN Council, which represents the 12 nations that own the laboratory, recently voted a preliminary approval of the LEP project by eight to four. A final vote is being delayed a few months while a couple of countries hold elections. Unanimity would be desirable for psychological reasons on a project this important, but if the eight-to-four continues to hold that will be sufficient to carry the project. LEP is planned to be built out of CERN's existing budget levels — no new money involved. New assessments would require unanimity, but shifting money within a budget level already agreed to does not. Unlike American governments, the CERN member nations commit themselves to given sums for CERN for several years at a time. This way the laboratory can plan ahead.

Meanwhile, U.S. laboratories are closed much of the time for lack of funds. When they run, they operate below capacity, and that is not for lack of people wanting to do experiments. American physics construction projects proceed at a pace of two steps forward, one-and-a-half back. Years ago one always saw the names of prominent European physicists all over papers coming out of U.S. labs. Today it is the American names on European papers. □



fice it to say that, after a few beautifully done but somewhat pointless encounters, the kid and dwarves find out that they have been caught by the Evil Wizard, but are saved, sorta, in the end. But, I still wonder, what is the point? Ralph Richardson, as the Supreme Being, is given some dippy philosophical lines to deliver at the end, but this only obfuscates. Heaven knows I don't require much in the way of coherent plotting in a Python film. I just feel that some more thought, and better editing on this film could have made it the anti-Hollywood establishment success it could have been. It still is far more interesting than most of the glop being run these days.

#### WORDS TO THE WHYS

Cover - Doth I detect a hint of sarcasm, a hint of disgust in this cover, Marty? "I hear they're collating a zine in Kalamazoo this month. I wonder when they will start?"

555 Times - Being a charter member of Apa-Tech, I have also watched with some alarm the thinning of the collation. This is not to say I have not also been geviously guilty of deadline abuse. Of late I have tried to improve somewhat. This contribution should be done on time. I like the situation that Apa-Tech lacks significant gutspill. Personal admonitions should be given in person, face-to-face or over the phone, not in a semi-public forum, which would only serve to provide mutual Embarassment.

Rod - "Fuzzy Pink" Niven is Larry Niven's wife Marilyn Joyce nee Wisowaty, so called because of her fondness for wearing fuzzy pink sweaters while a student at MIT. Re. 'bucket world'. - Doesn't this require a human sacrifice, as obviously someone must "kick the bucket" to get it started rotating? Re. JUGGERNAUT, I notice you referring to passive sensors and "all sensors active", with little definition as to what they are. As my current employment is in the field of sensors, specifically infrared imaging systems, I could provide you with more detailed info, if you desire.

Valli - Wow, such impulsive traveling. I usually give my impulsive urges a two week head start so I can use the Super Saver airline fares. So what is being done to insure the Chicon will be the Worldcon, as opposed to just a worldcon? If you are so concerned about the Chicago eating guise, why don't you help organize the effort to put it together? Perhaps you are already too busy on some other aspect of the con, however. My liberal suburban high school didn't have a dress code, but my mother did restrict my attire to corduroys and dress slacks until my senior year. As I have remarked before, suits make dressing easy, but also very monotonous. I object. California, especially around San Francisco and Los Angeles, is damned civilized. If "civilized" means grungy, grimy grey concrete canyons, someone else can have it. I dislike this New York vs. California animosity, with the Great Lakes/Midwest jumping in and denouncing both. Don't look now, but I may break down and purchase a three-piece suit just to have something for those ultra-proper occasions.



- Mike - Your didn't believe me when I told you Rochester was very provincial, now did you? At least your degree was in engineering. As Alice and I can attest, a physics degree, unless it is a PhD, is something very few personnel departments know how to deal with. Aerospace firms in LA subsidize UCLA and USC engineering very heavily. At least your luck (of the Norwegian?) came through finally. Re. your 'Digression', see my pseudo-flyer elsewhere in this issue. The fact that they want to hold the Worldcon in Anaheim, otherwise known as El Sleazo Supremo, or Tacky Town, is enough reason to be anti-LA in 84. Re. Urcon III - you forgot to mention the fool from Los Angeles (No, not Jittlov. The other one.) Yes, you are right, downtown Rochester is definitely no fun. I used to venture down there for shopping and chess tournaments at the YMCA. Good luck on the 432 project. Sounds like I better latch on to those Gene Wolfe books.
- Bill R. - I don't know. They still use RPG for the most incredible things, occasionally even report generation. Of course, the fact that it was the only language on some IBM machines may have something to do with it. I hope KGSM doesn't put every resume in the exact same form ala the UIUC College of Engineering. I had very little success with such a system, as I was nowhere near the norm academically and experience wise.
- Paul - Congratulations on the art sales at Denvention. Glad some people had a good time there.
- Jerry - Glad to hear/see that you replaced the Shockwave Rider(?). Our respectability, collectively and individually, continues to increase. The reason you should sample at a frequency equal to or greater than twice the signal bandwidth is because Nyquist's Theorem says so. As for 6 bits, the dynamic range of most TV phosphors is 30dB. 6 bit resolution permits a 32:1 signal ratio, and  $20 \cdot \log(\text{base} 10) 32 = 30\text{dB}$ . Standard TV video electronics bandwidth is 3 MHz. Please, somewhat fewer RAEBNCs next time. The fact that I didn't know any of this technical stuff I just related to you until six months ago is amazing, since I am now expected to be totally conversant with it.
- Angel - Very nicely done COA by Bill Higgins. Four colors of ditto, too. Hope that the new digs appeal to you. Glad you survived the Great Isher Adventure, more or less.
- Donna - So, Babelcon provided some much needed egoboo, not to mention sales? Perhaps the magic is still there. I finally discovered the mountains myself, as I related above in this ish. Of course, my co-worker from Colorado says that nothing counts as a "real" mountain unless it is over 10,000 feet. Hope to see the Isherites at Windycon.
- Bill H. - This zine is an A-Numero Uno effort, Bill. Great reporting on Chris Hart's Martian terraforming concept, and great cartoons. Who can ask for anything more? The "Gaia hypothesis" seems too pat to me, too, as it offends my sense of TANSTAAFL. (We physicists gotta have some aesthetics). I'm glad someone is giving constructive criticism of our zines. I just wish I could fake dancing better! Still haven't forgotten that badge



# MICHIGAN STATE IN '88

the site of MOOSECON I - THE WORLDCON YOU LEAST EXPECTED  
-- BUT NEEDED SO MUCH!

Are you sick and tired of Worldcons where:

- you sweltered in crowded, dingy grey cityscapes?
- you crammed people in your room to afford the outrageous hotel rates, and were stuck in an overflow hotel across town to boot?
- you find dining a chore because the few restaurants available were filled by the horde of hungry fen?
- you found function space limited and spread from here to Epsilon Indi?
- your presence was resented by the hotel staff and hookers, and to top it all off, the elevators broke down?

Fear not! Salvation has been under your nose all the time. Let's face it. Resorts are too small and too expensive, and downtown convention centers lack sufficient housing and eating facilities. But wait! What institutions house large numbers of people, have great physical surroundings, and plenty of meeting space? Why, UNIVERSITY CAMPUSES, of course!!!! And the obvious choice is

MICHIGAN STATE UNIVERSITY in EAST LANSING, MICHIGAN

Where you get

- a campus described by Kate Wilhelm of Clarion as "a dreamland of trees, a winding stream, vistas of lawns, groupings of trees". My Gawd, it's got canoes for rent!
- A site which swallows 45000 students whole every fall, but is down to a few thousand over Labor Day due to late starting. 18000 dormitory capacity, tons of eateries, auditoriums, and halls!
- A centralized location which has cooled from the summer heat, but with plane, train, bus, and interstate connections, and close to both Chicago and Detroit.

This pseudo-flyer brought to you by "The Consortium" Chief Fool; KEITH THORNE

Bill H. - at Autoclave, have you? Let us raise the cry of "Vee-sub-oh", (cnt'd) for orbital velocity. Between you, Valli, Gordon Garb, my co-worker, Mork and Mindy, and Stephen King in The Stand, I have heard nothing but praise for Boulder, Colorado. If it is all its cracked up to be, why aren't we all moving there? And, as Arlo Guthrie says, if three people do it, they'll think it's an organization, and if fifty people do it, they'll think it's a movement. Story Time is a great idea. but I would get tired of talking to myself. As for the self-solving Rubik's Cube, everything but internal motors is in a recent Byte magazine article. I get this bad feeling I will get moved to Chicago about the same time Barry does.

Jamie - I'll let Renee explain G.T.Buckfast. Otherwise RAEBNC

David - Taking a Fiesta through Canada is a lot safer than taking a Datsun (my car) through Flint, Mich (Buicktown), where my parents now reside. Wow, fancy-schmancy dot matrix printing. I could answer your questions about Anthony Villiers and Chambanacn, but I'll leave them to the people you asked. I have a very bad habit of jumping in and answering queries, even when I am not the one addressed. I have got to learn patience. I wish I'd learned to type that way, too.

Greg - Too bad to hear about your under-utilisation at your job. Imagine, a techie being displaced by a mere computer program. Between the Flying Eggplant and the Shockwave Rider, I sense I should have a name for my car. The previous one, a large green Ford Country Squire station wagon was labelled "the Landmaster". My current conveyance is a maroon Datsun 210 Hatchback. Perhaps the "Red Zinger" since it suits me to a T-ee. Your travels are more involved than mine, it seems. Boulder not only has a satellite, but clean air to boot. I am just manifesting the basic uncertainty in my facial waveform. You could term it "Schroedinger's KAT", as those are my initials. Mr. Lehrer is currently teaching math, and musical satire at UC Santa Cruz.

Bill L. - Many condolences on your lack of funds. Even an education loan, along with a part-time job, wouldn't do the trick? I want as good vision as possible to increase my edge in the competition. I am now worried that a recently-discovered heart murmur, despite no echocardiogram evidence, is a mitral valve prolapse, which could defeat my plans. I don't want to end up like Harriman in Heinlein's Future History tales.

Dick - I keep wondering which state is in the worse position to attract high-tech, Illinois or Michigan? Both of them train tons of home-grown engineers every year at U of I and U of M, only to see them leave to where the tech is higher, and better paying. To me, an apa is a conversation, while things like Pyro are publications for which one writes articles for general consumption. For example, an article about infrared sensors could be entertaining, but as conversation it is boring. I have refrained from Hugo voting expressly because I have not read the necessary amount of material in any category. Yes, Charles Platt was extremely nasty in "The Patchin Review" about Jeff.

It's 3:00 am and I need a good backrub. -

*Keith*

## General Tektonics II

the house organ of  
Jeffrey G Sekiya  
1005 W California  
Urbana, IL 61801

This was supposed to be done real early. We all know how that works. So here I am on Dec 6 typing at the Cyber. I suppose there are worse fates. Like typing this in for a postmailing. Enough griping about this.

Why do they insist on having Windycon during my finals? I mean, it's bad enough holding it so close to Christmas. But this closes me out completely. Actually, I do know why, but it's still their fault. Chambanacon was a lot of fun. It was really nice being at a con where more than a few of you were at. UR-Con and I-Con weren't as well populated by techies.

I have shelved plans for buying a terminal until after I graduate. With the demise of Sigmanet and the relatively few programming courses that I have to take the cost of terminal, modem, phone line etc. is a little too steep. I also think that I can do better for a few hundred bucks more. The IBM 3101 really is nice. If you can put up it's IBM idiosyncrasies. It has keys in some strange places. It's also the best (fastest) keyboard I've encountered.

NASA strikes again. The Shuttle went off at a decent hour this time so I got up to watch it. My stomach churns every time that thing goes up. Considering that the shuttle is NASA for the time being if it fails it will probably set the program back 5 years. I don't want to think how much bad publicity it will generate. The thing that frightens me about the shuttle is that since it is reusable, even with backup systems piled to the sky, there's a much better chance that a critical system will fail. Like they say, it was built by the lowest bidder. Once the system is established though, the backlash from a catastrophe should be reduced.

I watched the second launch attempt on CNN instead of the major networks. But I was told that on the previous attempt Rather went into his 60 minutes routine during the hold in the countdown, trying to assess blame and the rest of the spiel. CNN just carried the straight NASA feed.

I just read Oath of Fealty by Niven & Pournelle. I can't quite bring myself to call it a great novel. However, it's better than most. They managed to avoid putting in too much of the we're right, they're wrong, polemics. And it does have a great little slogan, "Think of it as evolution in action". There are some things in the book which I found hard to swallow. Especially the computer implants, not their existence but their use. There's a lot of sociology injected into the book.

I liked this book better than most of what Niven has written lately. I guess I like his writing better in collaboration than on his own, at least for the more recent stuff. It might be my opinion alone but I think his newer works are inferior to the older works. They don't inspire enthusiasm the way they used to.

MAILING COMMENTS

Rolf: Why did you mail your 'zine to me?

Cover: I'm packing! I'm packing!

Transporter Topics: Now if only I had \$225 to throw around.

Dr. Gonzo: If things work out right (me living in Chicago) I volunteer to help put together a restaurant guide.

Mike: You know what it takes to deal with the bureaucracy down here. Besides, the University's in session by Labor Day.

Bill R. CERL, Searle,... Where will you be working next? There's an article in this month's (Dec) Atlantic which claims that Reagan has effectively disavowed "winnable nuclear war" by his decision on MX.

Sing Ho for the Life: I agree, Cerebus is a lot of fun. I've missed it since Mike and Alice ran off, but the last thing that I need right now is more reading material.

Jerry: RAEBNC

Donna RAEBNC

Bill H: I talked to you about my comments en route to Chambanacon.

Keith: So when are going to move back to the midwest? Many thanks for the ride.

The trouble with scientists is that they're usually like a prophet in his own land. Nobody pays any attention until decades later. They probably still don't understand what happened but at least they know it was important.

On the flipside, your comments about scientific research occurred to me while I was reading an article about graduate education. The article was attacking medical schools for teaching research techniques to the exclusion of training them for the service profession that most of them would enter. The article claims that the schools are teaching that research is good and practice is just a burden. I think that too much emphasis on research can be a detrimental. But the article overstated it's point by not mentioning that some knowledge of research technique is necessary to understand the significance of developments in a field.

Well, I guess it's another minac. But the next one gets written over Christmas break during which I should see many of you. IT WILL BE LONGER! This issue is brought to you by the letters CDC, IBM, and many other fine characters.

MERRY CHRISTMAS!

## THE EIGHTH ORBITAL

for Apa-Tech no. 16

Jamie Hanrahan 18225 Kingsdale Ave. #208

Redondo Beach, CA 90278 213-542-9098

Since I have two issues' worth of mc's to do, I'd best get straight to it. Disclaimer: Many of the comments on A-T 14 were written before I read A-T 15, and I have not bothered to do much editing. Bear with me; it's been a busy two months.

### MAILING COMMENTS ON APA-TECH #14

INIGO: I really do wish that someone would explain all these psuedonyms. (Don't anyone assume that anyone else is going to do it, okay? Or am I, as a relatively late joiner of GT, condemned to suffer along in ignorance forever? This is my third request of this sort, you know...)

ROD SMITH: Your job doesn't sound all that mundane to me. // The Indestructable Man Syndrome can be explained by probability theory: There are enough people on Earth to allow for the existence of statistically lucky (and, of course, statistically unlucky) people. Put another way, the total number of psuedo-random events in one person's life is not necessarily large enough to constitute a statistical universe. // Re ct me, I'll have to do some more reading on designs for orbital laser weapons before criticizing them further. I hadn't heard of the laser bomb. I did hear of a plan for a chemical laser which would use a given "charge" of chemicals once, then expel them (and nearly all the waste heat) into space, refilling from storage tanks for the next shot. Of course this strictly limits the number of times the thing can fire, but it solves most of the cooling problems. // Can you give more details on your cardboard/epoxy/fiberglass technique? What do you mean by "epoxy" (certainly not epoxy glue?), and where can I get a beginner's book on using fiberglass cloth? (I did a very little bit of that in junior high woodshop, but don't remember any of it.)

VALLI: Yes, do tell us more about your new job! // Re ct me, SW-Apa has settled down somewhat, thank... er... something. (Its membership includes two born-again Christians, a large number of agnostics, and three followers of Wicca — one a high priestess — so it's difficult to say who or what might be responsible for any changes...) And it seems that they are contemplating going to a two-month cycle (they're now at one month), which should further help to quell the feuds-in-print.

GRETCHEN (both zines): RAEBNC.

THE EIGHTH ORBITAL  
Jamie Hanrahan

DOUG: RAEBNC.

DICK SMITH: Your CODpiece looked ok. // "Tho" is widely accepted in informal notes, memos, etc., but "alot" looks too much like a typo -- prejudice, I guess. // I don't think you caused any trouble by talking about Hugos!

DONNA STRUWE: Go ahead and invite your father to the wedding anyway. That way, if he doesn't show up, it's on his own head. Ten to one he shows up.

GREG RUFFA: Thanks again for the planets charts (not that one can see many planets from Los Angeles). Re ct me, of course spacecraft can lose heat by radiation, but would this be fast enough for a lasergun? I have no idea -- I'm just saying that it's something to be considered. Re spacewar orbit calculations, I'd pick method (3).

GUY WICKER: A fair number of Apa-Tech members have access to CP/M systems, but among GT'ers in general, the percentage is much lower. Check the GTIH index under

Computers  
    Software; programming; applications  
        Machines and systems  
            Microcomputers

Of course, the GTIH only shows what things people have volunteered to answer questions on, not everything they know about/have access to. Still, it's hard to not conclude that the Apple II has a much larger following in GT than do CP/M-compatible machines.

Somebody else said this in A-T 15, but I'll say it too: With CP/M distribution, we couldn't have artwork! Granted, I don't do any myself -- but I like to look at everyone else's efforts. Of course, there's nothing wrong with the idea of a computer-readable-media fanzine or apa in addition to Apa-Tech.

Oops! If you're a new member, you might not have your GTIH! Oh well, I did get your form, and your data is in the file. ("We know where you live! We know where you work! We know where you buy your floppy disks...")

JEFF SEKIYA: Hang onto that Z-19; we'll have a replacement for the GT Net soon... we hope. // Around here (DEC) we have a saying: "Unix sux." Seriously, VMS is a much better o/s for the VAX than is Unix; the people who wrote Unix for the VAX basically didn't know why DEC designed the hardware the way we did, and made some large goofs. It is possible -- trivially easy, in fact -- to write a Unix-like programmer's interface and command language interpreter ("Shell") for VMS, and such a thing is available through DECUS. Programs running under this package (the "LBL Tools" package), which in turn

operates under VMS, run faster than under VAX Unix! Case closed.

KEITHORNE: Do you realize that we communicate more via Apa-Tech than we do in person, or on the phone even?!? Oh, well, that's the way of it sometimes. // I prefer San Diego too, now that you mention it. // Re ct Renee, come now, it's easy to tell when it's Spring here if you live next door to a park... ugh.

MARTY: No suggestions for Story Time, other than to second (third?) Higgins' vote for Lem's The Cyberiad. Good stuff. // Anyone who designs and implements a language of their own deserves some ego-boo, so stop apologizing.

RENEE: Poor Renee and co.! I'd tell you you should've flown, except for what happened to me on my trip back from Millinocket. (Trouble developed in the L-1011's right engine, forcing us to set down in Kansas City and transfer to a 727. Fun stuff -- I've never been chased down a runway by fire trucks before. Always fly in Boeing aircraft if you have a choice.)

ROLF WILSON: So what's wrong with writing every other issue? It seems as though we're in the midst of the great Apa-Tech job shuffle... congratulations to you (as well as to anyone else whom I've missed). // Re ct Roper, what about thieves? If I was in your ChUSFA dungeon party, that'd be my line.

#### MAILING COMMENTS ON APA-TECH 15

COVER: Cute and appropriate.

GTB: [See also ct Inigo, above.] Maybe I should explain my ct you lastish: By saying that you shouldn't impose such stringent deadlines (I got AT14 two weeks before October oneth), I didn't mean that AT15's deadline should have been slipped to accomodate AT14's late arrival, but that AT14 shouldn't have been late in the first place. I agree with Higgins; you should have sent out a pair of covers with nothing in between! Look at Marty's cartoon again: If you don't take the deadline seriously, why should you expect us to? To mail AT14 a month late to accomodate late contributors, and then insist on the standard deadline for AT15, and then complain about the thinness of AT15, seems to me to be somewhat inconsistent.

Then again -- "Emerson!" Apa-Tech was hurt by #14's lateness, but I'm sure the scars will heal, and I'm in no position to say whether an empty issue would have done more or less harm.



THE EIGHTH ORBITAL  
Jamie Hanrahan

Anyway, AT15 did come out on time (so here I am, of course, doing my zine on the first of December, relying on the extended deadline!), and I at least will try to continue sending a "small but steady" stream of pages your way.

ROD SMITH: RAEBNC.

VALLI: I lot of people would prefer that worldcons had the feel of a large regional rather than of recent worldcons... // Re ct me: Exactly how do you want your GTIH entry changed? // Liked your worldcon report.

MUBETAN: I'd heard that apas could incur some really interesting timeslips, but this is ridiculous! // Re worldcon, several people have commented on the comparatively large number of no-shows. Has it occurred to anyone else that many of those no-shows might've simply been afraid to fly so soon after the PATCO strike?

I like the idea of using a university campus for a worldcon, but there is a possible hitch: Worldcons are held at the very end of summer vacation. (For a few schools, in fact, they're held at the very beginning of the fall quarter.) Many campuses -- many that I'm familiar with, anyway -- are host to football camps, cheerleader camps, and many other getting-ready-for-the-fall-term activities, and so might not have room for, or provide a hospitable atmosphere for, a worldcon.

Let me know when your 432 book is ready; I'll buy one. But, Mike, the VAX is neither a mainframe nor an oh-hum system (I don't want to say "machine", because it's the hardware and software in concert that make it special) of any size. Well, maybe it is when compared to things like the 432; I'll have to reserve final judgement on that until I see some 432-based systems and their software. But the VAX remains, at worst, a particularly nice oh-hum system.

BILL ROPER: RAEBNC.

PAUL: QuicklyRAEBNC. Write more.

JERRY CORRIGAN: RAEBNC.

ANGEL: Looked at AEBNC. Write.

DONNA: RAEBNC.

HIGGINS: Re ct me, no, a microwave beam wouldn't have the energy density of a

laser, but it might be as effective. Re ct me, that wasn't my idea, it was Gail's -- I just reported it.

ME: Come on, admit it -- you were just being lazy.

KEITHORNE: Very much liked "this or that?" and "scientists get lots of respect, but little egoboo".

DAVID LEVINE: The printer sounds nice, and produces some of the nicest dot-matrix characters I've seen yet; congrats on a good choice. The acronym for the IBM 360 and etc. is not EPSIDIC, but EBCDIC (Extended Binary Coded Decimal Interchange Code). CHARACTER CODE

Re ct Higgins -- Oh, so that's what that cover was about! (Excuse me while I beat myself about the head and shoulders for not having seen it myself.) Re ct Rod Smith on laser wounds, see my comments on lasers-as-weapons, below. Re ct me, liked your observations on user-writable videodisks. I don't see much point in the Mavica camera; film does it better at an acceptably low price per picture, so why bother? As an engineering marvel, however, it's a beaut... Re ct Rolf Wilson, he did it on a pen plotter, of course!

GREG RUFFA: Your job continues to sound fascinating, at least from the outside. Next time you run pictures of GT'ers (or any other fans, for that matter), you might add notes telling who's who; some of us (me, anyway) have only met them once or twice, if at all. Re ct me (at top of page 14), actually, that was straight BNF (Backus-Naur Form, one of the first, if not the first, metalanguages). Yes, you did read my comment to Valli right. Re mc's on AT15, I thought that a postmailing to ish 'n' wasn't supposed to contain mc's on ish 'n', but what the hell, the cartoon in your ct Higgins was worth it! Also liked the one on the back page (I've xeroxed it and posted it on my cubicle wall at work).

The Tom Lehrer songbook has shown up in a local B. Dalton's. Even better news: "Tomfoolery", a live revue of Lehrer's best work (including at least one number that's in the book, but never made it to a record) is now playing in New York! Wonder if they'll come to L.A. next?

DICK SMITH: Yes, we're interested in what you write -- I am, anyway. See my ct Valli re Denvention's "feel". Re ct me, the original EDT sucked, all right, but Version 2.0 (now distributed with VMS and RSX) includes a terrific full-screen capability, better in many ways than TECO with the VT52.TEC macro. This is available to RT-11 users as KED (for VT100's) and K52 (for VT52's). Re (second) ct me, fluidic digital computers were a flop, all right, but millions of fluidic analog computers are built every year. Fairly complex ones, too, with overtones of digital techniques in them. Give up? Answer at the end of this zine (if I remember to include it).

THE EIGHTH ORBITAL  
Jamie Hanrahan

Re Computer Networks: There are TIPS all over the country; what if everyone in GT applied for guest accounts at MIT?

BILL LEININGER: (One of the good things about doing your zine late is that you can comment on all the late postmailings.) If I ever bought a car with a talking dashboard, its speaker would be removed even faster than certain of the pollution control devices... // Well, I'll be damned ("probably", they muttered). I just checked my tape again, and Charlie Brown did say "I think it's about time we followed other people and withdrew from this award for next year". Somehow, when I discussed this last time, I interpreted that to mean forever -- probably because of his reference to following other people, and because others who withdrew from amateur-type categories that year did so on a permanent basis.

---end of mailing comments---

MINUTIAE, TRIVIA, MISCELLANY, AND ETC.

Re: IF YOU'RE SO PROLIFIC, WHY AREN'T YOU WRITING FOR PYRO?

All of you who responded to my comments on this are right. I find it easier to do a whole apazine for A-T than to do a single article for Pyro -- and I get a helluva lot more feedback out of the former. Still, it's fun to do a guest issue of Pyro every once in a while.

Re: THE GENERAL TECHNICS INFORMATION HANDBOOK

I'd appreciate some feedback on this, especially on the index. (Yes, I know the indentation under the "Computers" topic is hard to follow, but what could I do? List everyone who mentioned computers in one big list, and let it go at that?) I'm gratified by the high percentage of respondents -- I didn't think half the people on the Mob list would take the time, given the typical fan's penchant for procrastination, plus the fact that (as Dick Smith observed) many seem interested in GT only as a source of the fanzine. (Yes, Marty, I got your form yesterday.) It's also gratifying to note how many diverse interests are represented in GT. I think this should settle any worries anyone has about GT becoming a computer club, even though computers are the clear favorite.

Re: CHICON CHIRADES

On August 31st, Gail finally received her membership verification card from Chicon. On the twelfth of October, we got a note-with-reply-form from Linda Hanson (sent to our proper address -- hurrah!) asking if Gail had received P.R. 1 yet. We sent it back on the fifteenth, saying, no, she hadn't. I got

P.R. 2 on the sixth of November. Gail has yet to receive either P.R. 1 or 2.

I think I'm going to call the Chicago Hyatt tomorrow and make my room reservations. Somehow I don't trust the committee to get the official hotel cards to us on time. I wonder why?

I'll also note in passing that the "What to do in case of a hotel fire" article they ran in P.R. 2 was a direct rip-off of a copyrighted work (by one R. H. Kauffman, Los Angeles County Fire Department).

Re: IT BEATS WORKING FOR A LIVING

I'm still with DEC, despite the fact that there's another trip on my schedule (to Santa Clara, the week of Dec. 14th). As compensation, they're letting me have Thanksgiving, Christmas, and New Year's weeks off for free (i.e. without using any vacation time). And next quarter looks so busy that no one will have time for any on-sites. Besides, the two people who are teaching more advanced classes than I will be leaving soon, so any "off" weeks I have will probably be spent sitting in on those classes... things could get very interesting around DEC L.A. Ed. Svcs. in the next year. I think I'll stick it out and see what happens.

I've given much thought to the kind of work I want to do in my next job. I've decided that I don't like programming, per se. Once you figure out the plan of attack, the data structures to be used, how you'll take advantage of (or work around) the features of the operating system, etc., nine-tenths of the actual coding is drudgery. It's like the difference between designing a circuit (fun) and wire-wrapping the prototype (tedious). What I want is a job where I take specs for systems and turn them into specs for the programs that will make up the system. In other words, I'll be looking for a system analyst/project leader-type position.

Or I suppose I could go into consulting...

Work got really un-boring a few weeks ago, because TRW sent Gail to our PDP-11 Assembly Language class. Well, actually, they were going to send her, but then decided they couldn't justify the cost, because she was being moved to another project (which will use a VAX running) Unix where she couldn't use it. Her arguments that having any sort of A.L. training would be of benefit in getting her placed on future projects fell on deaf ears. When my boss heard about this, on the Friday before her class was to have begun, he said, "What the hell, tell her she can come for free."

We were both stunned. So was her boss at TRW. But they did let her go for the week.

Re: THE MYSTERIOUS STRANGER

Last week we got a Christmas postcard from someone in Plymouth, Michigan named Linda Leach, who is apparently a fan who does fantasy-type art, and does wood-

THE EIGHTH ORBITAL  
Jamie Hanrahan

block printing of her work — the art side of the postcard was a sample. Neither of us has ever heard of her. Does anyone have any idea where she got our address? (No problem; we're just curious.)

THE RIGHT TO CARRY LASERS IS THE RIGHT TO BE JAILED!

The no-lasers-at-cons faction now have even more grist for their mill. Just before Halloween, a laser technician brought a forty-milliwatt argon laser home from work, intending to use it in a Halloween display. While he was setting up, he left it pointed at the sky for a while — and unknown to him (he says), an LAPD helicopter flew through the beam.

Both pilots said they were blinded for ten seconds or so, but they managed to land the 'copter safely. One is claiming that he suffered permanent retina damage, which is highly possible given the power and color of the beam, but of course it's too early to tell.

The technician has been charged with assault with a deadly weapon. Typical police over-reaction? Maybe not. Police helicopters fly at extremely low altitudes — a few hundred feet at most — over densely populated areas. So the pilots have very little margin for error, and if they "lose it", the potential for death and destruction is quite high. A helicopter is an unstable beast at best, and if this one's pilots were really dazzle-blinded for ten seconds as they claim, I'm truly surprised that they were able to land in one piece.

In any case, you can bet your last Brewster prism that police all over the country have heard about this episode by now, and will be touchy as hell about thin beams of light — of any color — that they see pointed at the sky.

Ergo, if you don't want your lasergun (or you!) to be impounded, be damned careful where you point that beam. An "empty sky" may not be as empty as it looks.

\* \* \*

This reminds me of something else, with which I hope to kick off an extended discussion in A-T: The (un)feasability of energy weapons as personal armament.

Handguns and rifle-like devices that do damage by delivering pure energy to a target, as opposed to delivering a projectile of some kind, have been a staple of science fiction since... er... well, a long time. (I wanted to say "H. G. Wells' Martian heat rays", but those were carried on the Martians' ships. However, I think they were the first energy weapons of any sort described in sf, and the smaller versions that appeared later were no doubt derived from them.)

Maybe I'm just an old, cynical curmudgeon, but I don't think we'll see such things anytime in the near future.

Conventional slug-throwers are too easy to build and do their jobs too well; there just isn't any justification for spending the time, money, and sweat it would take to develop, say, a laser pistol, or a rifle that kills with a tight-focused microwave beam.

Comments?

\* \* \*

From a squib in the Reader's Digest, October, 1981, contributed by Gene P. Ledbetter -- Sign, seen on a laser in a physics laboratory:

"Don't look into laser beam with remaining eye."

#### ANSWER TO PROBLEM GIVEN TO DICK SMITH

The mechanism that controls a car's automatic transmission is nothing more or less than an analog fluidic computer, of considerable complexity. Take a look at a service manual for one sometime -- they talk in terms of "circuits", "relays" (pressure in one line trips a plunger that operates valves in other lines), "operational states", and so forth. And you thought fluidics were dead....!

See you next ish -- or, more likely, the one after that.

# The Quintessential Singularity 15

7 December 1981

for APA-TECH 16

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\* \* \*

I didn't have as much time to hack around in the past month as I thought I was going to, so this will be one of my shorter contributions. You wanted the rest anyhow...

Work is really starting to cut into my outside activities. We are down to T minus 10 weeks; the launch of Westar IV has been postponed a week to February 25<sup>th</sup> and will probably stay there now. There was a class last month on all the available telemetry and commands and one this week on how the satellite's attitude control system works. It looks to me like Hughes is trying to develop intelligent satellites that can look after a lot of their own functions. This is particularly important with the HS-376s: the long, telescoping solar panel sleeve makes the spacecraft dynamically unstable; instead of spinning about its long axis, this cylinder wants to turn end over end. There will be onboard control systems to correct the satellite's "wobble" by firing its maneuvering thrusters or changing the speed of the counter-rotating antenna platform. Of course, we have to understand these systems thoroughly to make sure they're doing it right... There will be an abbreviated launch rehearsal in mid-January and a full-blown one for the week of February 8<sup>th</sup>. And there's still lots of things to straighten out yet...

Once Westar IV arrives on-station, I get to plan and run the maneuver to relocate Westar I to 79<sup>0</sup> West. Hughes will kind of give us advice, but this job is our responsibility. So if you hear I'm looking for a job around March first, you'll know what happened. There is a good chance that I may get to see some of the Westar V tests around next May, so I may get to L.A. yet. The launch for that one is in late September.

My course at Finicky Cat College in transistor circuits is almost over; I just have to write out all the lab reports (gosh, some of our amplifiers even worked!). Next semester, I will be taking the course on electronic communication systems and, so it seems, teaching the one-semester astronomy survey course, "The Universe on \$5 a Day." This is in addition to preparing a planetarium show for March. It's really a shame work gets in the way...

\* \* \*

I was in Boston again last weekend to hear a Symphony concert with some friends I haven't seen in a long while. Besides getting caught in a real nice blizzard, I had the occasion to get caught up on some items of note.

Two signs of the times -- In early movie houses, the Management would run lantern slides advising ladies to remove their hats and gentlemen not to spit on the floor. At the MIT Friday night movie, the Lecture Series Committee ran a slide with the note:

NURDS -- SILENCE YOUR WATCHES!!

We were also told that studies have shown that smoking can lead to "low grades and compulsory commons for the rest of your life" -- a curiously effective no-smoking sign... I was told about the Freshman Class Picnic for the class of 1984, which featured a banner declaring:

WAR IS PEACE  
FREEDOM IS SLAVERY  
COMMONS IS EDIBLE

I wandered into the games room at the Student Center, having been there only a month earlier, and noted that then-new games such as "Tempest" and "Donkey Kong" were already being passed over for a still newer game called "Qix." I've always been a bit puzzled by the fanaticism displayed by some toward arcade games, but I must say that I am very disturbed by the voracious appetite of many people for novelty. What are we to do when the creative work of some, even in computer games, fails to hold the public's attention for more than a brief span? What happens when a society uses up ideas faster than they can be invented?

I read an interesting little paper in a recent issue of Icarus that applies some of the orbital theory I discussed last time. You've probably heard about the two little Saturnian moons that supposedly "play tag" with each other. The author of this paper suggests that perhaps nothing of the sort occurs. Since one moon acts to accelerate the other, the latter is pulled into a higher orbit and proceeds to fall away from the former. Later, that moon winds up ahead of the first, gets decelerated, drops into a lower orbit, and rushes ahead again. These two moonlets may never get within 10° of each other; the author also suggests possible implications for the dynamics of the entire ring system.

I came across a book published late last year called Strategies for the Search for Life in the Universe, edited by Michael Papagiannis of Boston University. It is a transcription of a meeting at the IAU General Assembly held in Montreal on 15 - 16 August 1979. The book contains numerous papers representing the gamut of opinions on the number of extraterrestrial civilizations in the Galaxy, N; on passive and active methods of search in and out of the Solar System; and why we haven't found them/they haven't found us yet. Representative of the lack of consensus even among professional astronomers are three papers entitled, "N is Very Small" (Michael Hart), "N is Neither Very Small Nor Very Large" (Frank Drake), and "N is Either Very Small or Very Large" (Papagiannis). One of the other papers I had time to read suggested that if ETs were flying fusion- or antimatter-powered starships anywhere around here, we'd have seen them by now. This is definitely a great book for starting arguments and fistfights over this issue. Curiously, there is nothing by Tipler here; it appears he was not at this meeting...

\* \* \*



As a brief reminder, I shall be editing APA-TECH 17, which I declare to be The Random Issue. I'd like you all to try something "random" or otherwise out-of-the-ordinary. I again offer 2¢ Xeroxing, provided I receive your work by February 10<sup>th</sup>. The issue will be distributed or relayed at Boskone.

\* \* \*

Next year, 1982, is rather special in that there will be seven solar and lunar eclipses, which is the maximum possible number in one calendar year. To see how unusual this is, we should investigate

the way eclipses come about. As you probably already know, the reason we don't have two eclipses a month is because the plane of the Moon's orbit is inclined about  $5^\circ$  to the ecliptic, or plane of the Earth's orbit. Thus, the Earth's and Moon's shadows generally miss landfall. To produce an eclipse, the Sun, Moon, and Earth must be on a straight line in space; this can occur when the line of nodes (the line of intersection between the two orbital planes) points to the Sun. But the perturbing influence of the Sun on the Moon causes this line to rotate westward on the sky at the rate of  $19^\circ/\text{year}$ . The result is that a node points to the Sun once every 173.3 days; the interval between successive passages by the same orbital node is one eclipse year, 346.6 days. The Moon's orbital period is 27.3 days, so eclipses within an eclipse season are 13.65 days apart.

Since the eclipse year is shorter than the solar year, there is a chance of having three eclipse seasons in one calendar year. If the first eclipse season begins before January 19<sup>th</sup> (such is the case in 1982), then the third eclipse season will begin before year's end. The average number of eclipse seasons per year is:

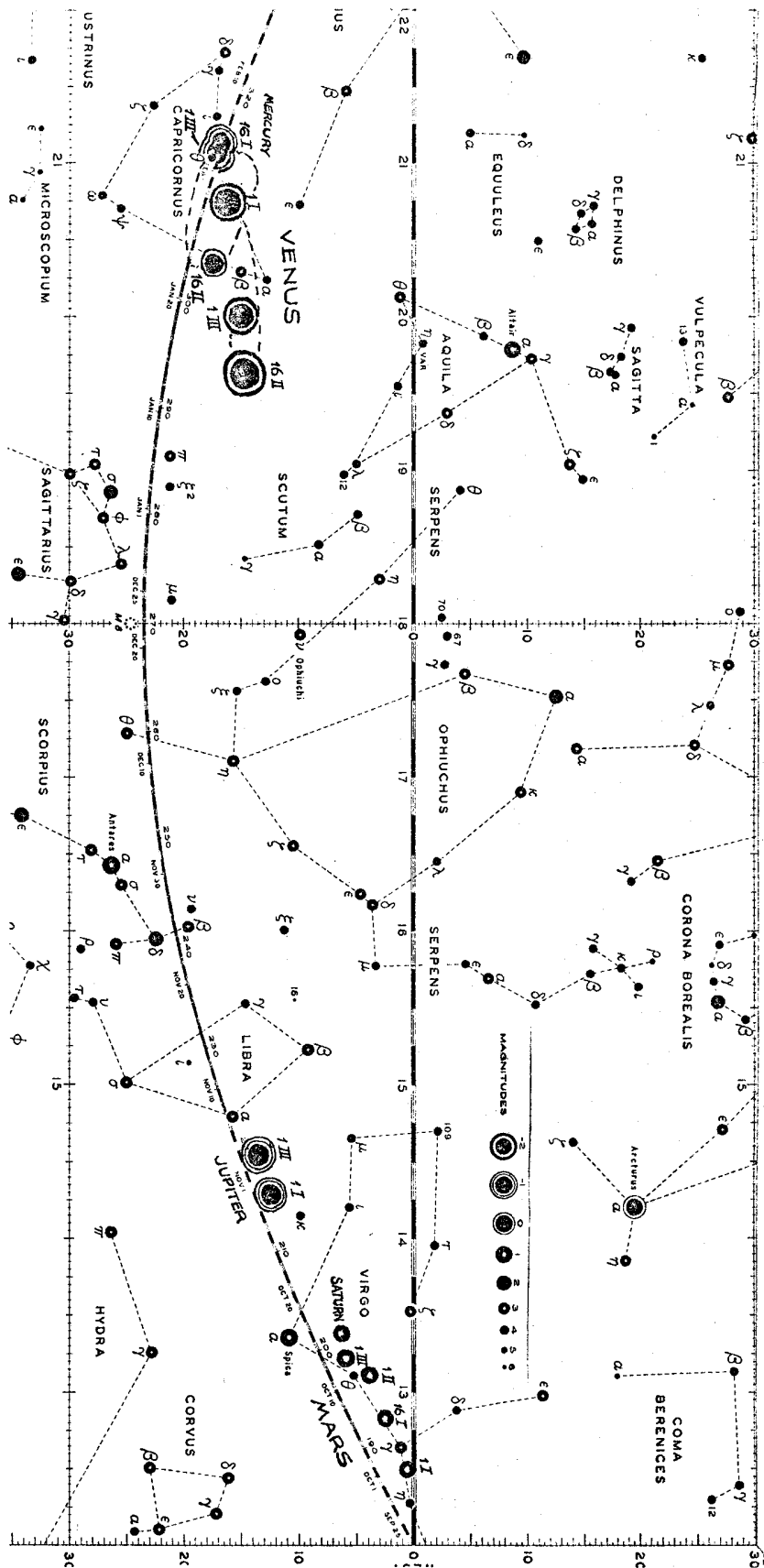
$$\frac{346.6 \times 2 + 18.7 \times 3}{365.25} = 2.05$$

In a particular eclipse season, solar eclipses can occur within 15.4 to 18.8 days of a node passage and lunar eclipses within 9.4 to 12.3 days of said passage, depending upon the Earth-Moon and Earth-Sun distances. With reference to the first solar eclipse in a minimum and maximum season, we have:

minimum				maximum			
0 - 3.9 d. [3.9 d.]	solar			0 - 10.3 d. [10.3 d.]	S		
3.9 - 11.6 d. [7.7 d.]		S		10.3 - 17.6 d. [7.4 d.]		L	
11.6 - 19.6 d. [8.0 d.]			S	17.6 - 19.9 d. [2.3 d.]			S
19.6 - 27.3 d. [7.7 d.]		L	S	19.9 - 27.3 d. [7.4 d.]	L		S
average number of eclipses:	$\frac{3 \times 3.9^d + 2(2 \times 7.7^d) + 1 \times 8.0^d}{27.3^d}$			$\frac{3 \times 10.3^d + 2(2 \times 7.4^d) + 1 \times 2.3^d}{27.3^d}$			
	= 1.85			= 2.30			

The average number of eclipses per season is about 2.1, so the average annual number is about 4.3. Of the seven eclipses occurring next year, four are partial solar and three are total lunar. In the U.S., we'll only be able to see the total lunar eclipses on 6 July (except in the Northeast) and on 30 December.

\* \* \*



# THE PLANETS -- 1 JANUARY TO 1 MARCH 1982

All of the visible planets will slip into retrograde loops during this interval, the outer planets because they are near opposition to the Sun, the inner planets because they pass through inferior conjunction. Venus will drop out of sight between mid-January and mid-February, later becoming a morning star. Mercury will do likewise, vanishing during late January. Mars, Jupiter and Saturn will be strung out across Virgo, appearing high in the midnight sky. Mars catches up with and hovers around Saturn throughout February.

I got a jump on the mailing comments last month and will finish them off here.

POLES OF ORDER 1 & 2 --

INAUDIBLE CONSEQUENCES: That satellite in your cartoon is rather like one of the Intelsat IV or IV-As or of the Comstars, which are also Hughes "spinners."

PROPOSED HYPERBOLIC MANEUVER: I feel the same way about having to travel so far away from here to have a good weekend. I'm going to have to insist, when more of you folks have decent amounts of money, that you guys come to the East more often. Rolf, Jerry and Dave Marquart are coming out to Boskone, and we have Mike and Alice. We'll get you yet...

Let's hear it for the balanced brain! Frankly, I think "pop psychology" is a bunch of hooey. This "right brain, good -- left brain, bad" concept seems an excuse to make us feel guilty over the fact that science and technology have not been the salvation of humanity all by themselves. These people forget that these are materialist, amoral forces and that we acquire from them exactly the results we invest our efforts for. I've said more about this in my faith-and-reason spiel a while back.

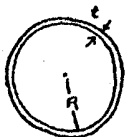
As an extension of this issue, I am going to take exception to your statement that "science is totally different from art, literature, and music because it is not at all easily accessible to the non-specialist." This is simply not the case. Most people feel lost at museums and concerts and rarely read the classics precisely because they lack the background in artistic thought and history to appreciate why "great art" is great. But they know what they like: this is just why "pop" culture has become such a tremendous force in our society. It is also quite profitable to appeal to the so-called "least common denominator." I am not maligning television, musicals, comic books or other entertainments -- I enjoy them, too. But people must also have their tastes and experiences broadened by more challenging esthetics. Our system of education has yet to provide this adequately.

My own study of scientific and artistic history suggests to me that science is one of the "humanities." Science has its own esthetic principles and art requires an orderly world-view to be successful. (Again, I have discussed other aspects of this matter previously.)

ARCH SUPPORT: What is not yet realized by most Americans is that the Japanese and the Germans won the Second World War -- it just took them forty years...

A solid Dyson sphere would, in fact, be dynamically unstable, but I always assume the existence of one in order to determine lower limits for energy collection times (in what is certainly a highly idealized situation).

A Dyson sphere at Mercury's orbit would have a radius of 60 million kilometers. The mass of the entire asteroid belt is on the order of 100 Earth masses. For a solid spherical shell, we have:



$$4\pi R^2 \rho t = 4\pi \cdot (6 \cdot 10^{12} \text{ cm})^2 \cdot 3 \text{ g/cm}^3 \cdot t = 100 M_{\oplus} = 100 \cdot (6 \cdot 10^{27} \text{ gm})$$

$$\Rightarrow t = 440 \text{ cm} = 4.4 \text{ m.}$$

Thus, there probably is adequate material in the asteroid belt to create a loose sphere in Mercury's orbit, intercepting, say, 10% of the Sun's power. You just need the energy to put it together in the first place...

If a star's light were ten-percent-occluded in this manner, the decrease in apparent magnitude produced thereby would only be 0.11 magnitude. This is less than the typical present uncertainty in the actual luminosity of main-sequence stars. The diversion of visible radiation into infrared would not produce a significantly greater departure from an ideal blackbody curve than a stellar atmosphere does anyway. Such "loose" Dyson spheres could actually exist elsewhere and we wouldn't know about them!

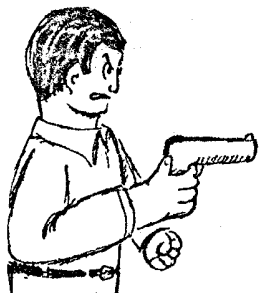
SMITH'S CORONA: Various approaches are being used in order to allow tighter packing of satellites on the geosynchronous ring. A popular one being brought into use now is to put two transponders on (nearly) the same frequency with their signals polarized at right angles to one another; this lets you jam 24 transponders into the available frequency band, instead of only twelve. Satellites with very different transmission "footprints" could be placed "right next" to each other. Tighter ground antenna beam patterns will permit satellites to be spaced closer than the present 4° separation for those working in the same frequency band. Some folks are also getting ready to exploit the 12 GHz band; we work the 6 GHz band currently. Work is also being done to get more channels on each transponder to increase each satellite's information carrying capacity.

Have you made your feelings about Pyrotechnics known to Jeff?

STRAIGHTS OF FINANCE: I feel really badly for you over the turn your situation has taken. Is there anything we can do?

It seems likely from the satellite report I have here that Early Bird is Intelsat I. It also shows Telstar 2 to have been launched on 7 May 1963, but the proposal list we have does also show a satellite identified as "Telstar 2"; you got me on that one...

Your comment on "machine talk" suggested this:



*You'd better be right about this, or you'll have to answer to the Coca-Cola company!!*



ERRATUM - My comment to Marty about Robot Wars should have read, "It would seem that the best strategy would be to destroy enemy stations as quickly as possible, in which case the game reverts to its unmodified form." That's what comes of typing at 3 AM...

\* \* \*

See you somewhere or other soon...